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GEORGE H SIMMONS, M D, LL D

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RESUSCITATION APPARATUS

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During the past four or five years a number of mechanical devices for resuscitation from electric shock, drowning, and asphyxiation by poisonous gases have appeared on the market Properly speaking, none of these devices is anything more than a means of supplying artificial respiration with air more or less enriched with oxygen There has been a general failure to distinguish between a method for maintaining the pulmonary ventilation and methods (for practical purposes as yet undiscovered) for restoring the heart beat after fibrillation or standstill, and for counteracting the paralyzing effects of asphyxia on the nerve centers of the brain and cord This has resulted in the term "resuscitation" apparatus being generally applied It is important to keep in mind the limited character of this resuscitation

The demand for such apparatus arises from the modern "safety first" movement Any piece of apparatus which proved fairly effective for resuscitation would undoubtedly be a source of great financial profit to its manufacturers Competition is already keen, and new forms of apparatus are demanding advertising space in medical journals

As a result editors, superintendents of hospitals, mines, gas works, electric light and telephone companies, commissioners of city police and fire departments, persons in charge of swimming places, and others are writing in increasing numbers to the United States Bureau of Mines to ask as to the value of such apparatus in general, and as to the relative merits of the different kinds

This paper is intended to supply such information I have served as consulting physiologist to the bureau during the past three years, have examined for it such apparatus as has been submitted, and have cooperated with the engineers of the bureau in drawing up the regulations covering such matters I was also a member of the Resuscitation Commission of the American Medical Association and the National Electric Light Association, which in 1913, with Prof W B Cannon as chairman, studied and reported on resuscitation apparatus and methods, and which later made a similar report to the Bureau of Mines[1]

It is noteworthy that the control over the manufacturers of resuscitation apparatus indicated in the preceding paragraph has not had back of it any specific legislation The approval or disapproval of the Bureau of Mines and of the National Electric Light Association, and the acceptance or rejection of advertisements by such magazines as THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, practically make or destroy the market for apparatus Both in effectiveness and in flexibility this method of control under disinterested expert advice and solely in the interest of the public seems far preferable to that by legislation, either national or by the separate states

PULMOTOR

The first of the several forms of apparatus now on the market to attract attention was the pulmotor In this device a tank of compressed oxygen was connected through a reducing valve with an injector, so that a considerable volume of air was drawn in, mixed with the oxygen, and the current directed through a hose to the face mask It was generally believed by persons purchasing the pulmotor that pure oxygen, or air greatly enriched with oxygen, was supplied to the patient This however, was not the case, as the injector diluted the oxygen with ten or twelve times as much air In various analyses the oxygen content of the gas supplied by the pulmotor was found to be about 28 or 30 per cent As pure air contains 21 per cent, the oxygen enrichment was therefore not considerable The purpose really served by the compressed oxygen was to supply the motive power which worked the apparatus Compressed air would have been equally effective for this purpose

The force of the air coming from the injector actuated an ingenious mechanical device by which a valve was alternately thrown in one direction or the other, so that air was blown to or sucked from the mask fastened over the patient's face In order for this device to reverse, however, a considerable positive or negative pressure was necessary, and these pressures came just at those points in respiration at which they were most unnatural Furthermore, in case of any obstruction to the flow of air, the positive and negative pressures necessary to reverse the apparatus were induced in such rapid succession that the suction and injection phases alternated too rapidly for the subject's lungs to be properly distended and deflated This was liable to occur if for any reason there was an obstruction in the throat Some part of the injector or reducing valve was also found liable to get out of order, thereby rendering the apparatus ineffective

The objections to the pulmotor concerned not only its deficiencies as a means of administering artificial respiration, but also its extraordinary effect on public opinion Although its manufacturers, the Draeger Company, have shown themselves at all times during my experience with them to be a highly honorable and well intentioned business concern, nevertheless there has probably never been invented an apparatus which of its own accord aroused such extravagant and unfounded expectations among the general public It was, indeed, impressive to see the apparatus working automatically Coupled with the ignorance of most persons as to the distinction between mere unconsciousness and respiratory failure, and as to what part treatment can play in resuscitation, the interest which the pulmotor excited caused it for a time to receive such an amount of free advertisement through the newspapers as would undoubtedly have resulted in its being purchased almost universally within a few years Public opinion in numerous cities compelled the gas, electric light and telephone companies, and the fire and police departments to purchase pulmotors From the newspaper accounts of cases in which the pulmotor was employed, one would have supposed, and many persons, including even physicians, evidently did believe, that the pulmotor was practically capable of restoring the dead to life It was described as "forcing oxygen in and sucking the poisonous gases out" For a while no one seems to have inquired why, in these processes, the lungs were not exploded or the pulmonary blood sucked out through the trachea

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[1] Report of the Commission on Resuscitation from Electric Shock published by the National Electric Light Association New York 1913 Report of the Committee on Resuscitation from Mine Gases Technical Paper 77 U S Bureau of Mines Washington 1914 Work of the Commission on Electric Shock editorial THE JOURNAL A M A Nov 1, 1913 p 1637

This exploitation was brought to a sudden stop by the report three years ago of the Commission on Resuscitation, adverse to the apparatus, or rather to the extravagant reports and beliefs current concerning it In particular, the investigations of the committee showed conclusively that in at least a large percentage of the alleged resuscitations — especially from illuminating gas poisoning — the subject was breathing spontaneously before the apparatus was applied Artificial respiration was therefore not needed and could not possibly have contributed materially to the patient's recovery

LUNGMOTOR

The other devices thus far placed on the market are of a simpler type The "lungmotor" consists of two pumps — to all intents and purposes, such pumps as are used to inflate bicycle or automobile tires They are fastened together in such fashion that the down stroke forces air from one of the pumps into a mask held over the patient's face, while the up stroke withdraws some of the air from the patient's lungs into the other pump An oxygen tank can be connected so that the air injected into the lungs can be enriched to any desired extent with oxygen

The advisability of actively withdrawing air from the lungs is a matter on which there may at present be a reasonable difference of opinion Such light as experiment can throw on the matter is afforded by the fact that some years ago an apparatus which worked in this fashion was invented by Prof Hans Meyer of Vienna and was installed in a number of physiologic laboratories both in America and Europe Apparently it has been generally discarded, and return has been made to the ordinary method of intermittent injection of air into the lungs with intervening periods for the elastic recoil of the chest to force the air out through a hole in the side of the tube leading to the mask or tracheal cannula I am inclined to doubt, however, whether an active withdrawal of air with a pump of limited stroke has any very serious objections, since the suction ceases at the end of the stroke Some years ago in experiments with two pumps arranged in a manner similar to the "lungmotor," and worked quite violently, I observed no particular ill effects on the lungs The manufacturers of the "lungmotor" claim that in drowning cases the suction feature is advantageous The apparatus can be worked so as to use only the injection pump, by leaving the tube to the suction pump disconnected

VIVATOR

Even simpler is the "vivator" It consists of one pump, which forces air through a tube to the mask held over the patient's face when the plunger is forced down, and of a valve which is opened to allow this air to escape during the upstroke of the pump It is practically identical with a simple arrangement of an automobile tire pump which has worked satisfactorily for experiments requiring artificial respiration in my laboratory for the past ten years It is, however, rather clumsy and noisy It is possible that both with it and with the "lungmotor" a somewhat excessive positive pressure might be produced To prevent this it appears advisable that in apparatus of the pump type there should be a blow-off valve or equivalent device, set to open under a water column pressure of 25 cm (10 inches), and that when as in the "lungmotor" there is also a suction pump, there should be an inlet valve set to open under a pressure of 15 cm (6 inches) It would be of advantage also if there were another valve on the mask which could be opened in order to test the capacity of the victim to maintain natural breathing without removal of the mask

PULMOTOR MODEL B

Recently the Draeger Company has brought out an apparatus which they call the "Pulmotor Model B" Its motive power is supplied either by a tank of compressed oxygen or by a tank into which air is first pumped by the operator The compressed gas, oxygen or air, passes through a tube to an injector where it aspirates a considerable amount of outside air and thus provides a sufficient current and pressure for artificial respiration By means of a switch worked by hand the injector can be directed so that the current is blown through a tube to the face mask, or aspirates the air from it The apparatus is in all essentials a pulmotor without the automatic feature, to which the committee mentioned above particularly objected, and which exercised for a time such a hypnotic effect on newspaper reporters and the public

The "Pulmotor Model B," like the original form, appears not to be capable of supplying a high percentage of oxygen, as the injector necessarily draws in a considerable volume of air with which the oxygen is diluted The mechanism of the apparatus is also rather delicate and liable to be put out of order by rough usage On the other hand, in a hospital or laboratory where compressed air is available, or where a small air blower connected with an electric motor could be installed, for treatment in morphin cases or asphyxia neonatorum, or in the operating room, it is possible that "Pulmotor Model B" might prove a satisfactory and useful instrument For the intern charged with maintaining respiration in a morphin case and with compressed air at hand, it would certainly have the advantage of being far less tiring than any other piece of apparatus now available

In order to avoid any danger of excessive positive or negative pressure, it is recommended that there should be inlet and blow off valves set to a positive pressure of not more than 15 cm (6 inches) water gage, and a negative pressure of 10 cm (5 inches) water gage The limits of pressure should be lower than in the case of pump apparatus because the patient's lungs may be subjected to the pressure for a longer time The apparatus should also be made capable of feeding pure oxygen, or at least air largely enriched with oxygen

OTHER APPARATUS

The latest but probably by no means the last apparatus to appear is the "life motor" This device has not yet come under my examination It is claimed, however, by its manufacturers that it is an efficient and easily adjustable apparatus for administering artificial respiration, and for supplying oxygen or air enriched with oxygen

There is really no limit to the number of devices of this sort which can be, and perhaps will be, got up hand bellows, foot bellows, bellows run by a motor, pumps, single and double, acting directly or through an injector The mechanical requirements are easily met The important thing is that the apparatus should be of such a simple character as not to impose on the credulity of the ordinary man All that any apparatus yet invented can accomplish is artificial respiration with air enriched with oxygen The superiority of a mere pump over any automatic apparatus lies in its simplicity The same men who regarded the pulmotor with awe and wonder remark, of the "lungmotor," "Why, you can blow up an automobile tire with that thing"

MANUAL METHOD VERSUS APPARATUS IN ARTIFICIAL RESPIRATION

Even in respect to a simple pump, evidence is accumulating that physicians, as well as laymen, are prone to overestimate what can be accomplished with apparatus In consequence, the immediate application of manual artificial respiration is neglected and thereby life is lost while the apparatus is being sent for and brought Thus in a recent disaster in which an overcrowded vessel sank at its wharf, it appears that the victims when taken from the water instead of being treated immediately by the prone pressure method, were carried some distance to a temporary hospital and were then treated with apparatus Probably all of them were beyond recovery even when taken from the water, but it is significant of the overestimate placed even on so obvious a thing as a pump that some physicians are reported to have expressed surprise that the apparatus (lungmotors) effected no resuscitations

On the scientific side there can be no doubt that in a man or animal in whom natural respiration has ceased but the heart is still beating, life can be maintained more easily and much longer by means of artificial respiration administered with a pump or bellows than by means of either the Sylvester or Schafer manual methods In all physiologic laboratories, apparatus for maintaining artificial respiration is provided If an experiment is to be performed in which spontaneous breathing is eliminated (as under curare or after decapitation), no physiologist relies on his janitor or laboratory boy to keep the animal alive by squeezing the chest or working the fore legs

The Resuscitation Commission found that although the prone pressure method of artificial respiration devised by Schafer[2] is in nearly every respect superior to the Sylvester method, yet the claim of Schafer that by his method as much air can be administered even to an apneic subject as is obtained by the subject in normal breathing is not justified It is true that in experiments on normal men, if the subject is not in apnea, as much air — in fact *exactly* as much and never appreciably more or less — is drawn in and forced out of the subject's lungs by the prone pressure method, as the subject would himself spontaneously breathe It was, indeed, the noting of this fact which led me, while working on the commission, to discover that in a conscious, normal, not apneic subject, the subject's own respiratory center, rather than the exertions of the operator, determines the amount of pulmonary ventilation afforded by the prone pressure method The operator squeezes air out of the lungs, but between the applications of pressure the subject's respiratory muscles draw in what he needs — no more and no less In fact, the chemical control of respiration is strikingly exemplified by the behavior of a normal man under "artificial" respiration On the other hand after the subject has performed forced breathing and has thus brought himself into a condition in which there is no spontaneous activity of the respiratory center, the amount of ventilation obtained by the prone pressure method is markedly reduced

Furthermore, it was found on animals in respiratory failure (induced by an excess of chloroform) that the amount of air, as measured by a spirometer connected with the trachea and recording on a smoked drum, which can be drawn in and forced out of the chest by manipulation of the fore limbs and squeezing of the chest and abdomen, gradually decreases as the muscles of the body lose their tonus At first and while the tonus or elasticity of the muscles is still high, soon after spontaneous breathing has ceased, a very considerable movement of the spirometer can be induced But after ten or fifteen minutes, when the body has become entirely flaccid, only a quite negligible movement of air in and out of the chest results, even from the most vigorous stretching and compression[3]

While working on the Resuscitation Commission, Dr Meltzer found that in dogs after abolition of muscular tonus by means of curare, the Sylvester method supplied a respiration sufficient to maintain the heart beat for only twelve minutes, while with the Schafer method the shortest time was eighteen minutes and the longest thirty-one With no treatment whatever, the heart would have continued to beat for from eight to ten minutes

The most important scientific point in this connection, however, is the fact that from the moment when spontaneous respiration ceases, whether by drowning, electric shock, excess of anesthesia, gas poisoning or any other form of asphyxia, the probability of restoration by any method grows rapidly less as the minutes pass The Resuscitation Commission, after considering the matter in the light of such evidence as is available, concluded that probably ten minutes is the extreme limit of time beyond which restoration is practically impossible It is true that there are occasional popular reports of persons who are supposed to have been in the water or buried in a cave-in for a longer time than this, and who have been restored, but in such cases it is highly improbable that there was complete submergence or that the reports in other respects represent the actual facts In the class of cases with which I am best acquainted, namely, those in which respiration fails under anesthesia in cats and dogs under experiment, the large majority have proved susceptible of restoration by the administration of artificial respiration, provided it was given immediately Indeed, I have a strong impression that during the first minute after the cessation of breathing, the administration of manual artificial respiration is more effective than that by means of a pump or bellows, the reason apparently being that a slight assistance is given to the heart and circulation by the manual method which is not afforded by mere changes of air pressure in the lungs Certainly both in the laboratory and operating room, in the great majority of cases the immediate application of manual artificial respiration is effective in restoring normal breathing On the other hand, a delay of even two or three minutes has usually resulted in the failure of the efforts applied thereafter, and if the animal has been left without measures of resuscitation for five minutes after the cessation of spontaneous breathing, the subsequent efforts at revival have never been successful

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[2] Schafer E A Harvey Society Lectures for 1907 1908 New York 1909 p 223

[3] Liljestrand Wollin and Nilsson made similar observations (Skand Arch f Phys 1913, xxix 198)

In the large majority of the reports of alleged restorations effected with apparatus, the statement that the apparatus was telephoned for and was rushed to the spot is a significant item A telephone lineman touches a wire which has been crossed with a power line, and falls to the ground unconscious and apneic A man who went to bed drunk in a cheap hotel is found in the morning with the gas turned on A man in a trench in the street over a leaking gas pipe is overcome A longshoreman falls into the harbor and is hauled out and laid limp on a wharf Suppose that in such cases the rescuer runs to the nearest telephone Apparatus is "rushed to the spot" If it arrives after the tenth minute (and it will seldom arrive so soon) the man is dead, and the vigorous working of the apparatus for the next hour succeeds at most in producing an emphysema in the corpse Even in the unusual case in which the apparatus arrives and is applied in six or eight minutes, the chances of resuscitation are not nearly so good as they would be if the prone pressure manual method had been begun within thirty seconds after the accident

In those cases in which apparatus was not applied until twenty or thirty minutes after the accident or after the patient was found — and such cases form the large majority of alleged cures — it is practically certain that the patient never ceased to breathe spontaneously, and that the apparatus contributed nothing material to his recovery This was true of practically all the cases investigated by the Resuscitation Commission, and it is true of a number of cases which I myself have attended (as an observer) since the commission made its report It is significant that the attending physician in some of the latter cases was inclined to attribute to the effects of apparatus recoveries which were clearly and solely the result of nature

From these facts it seems fair to advise that breathing apparatus should be provided in those fields of work in which it can be at hand when an accident occurs, but not for cases in which it must be sent for A reliable air pump for artificial respiration is an important part of the equipment of a mine rescue crew — not so much for the men rescued from an exploded or burning mine as for use on members of the rescue party who may be overcome Artificial respiration apparatus could advantageously be kept at bathing beaches It might also sometimes be useful for the men in a city fire department In nearly any hospital it is likely sooner or later to prove useful Apparatus suitable for use on new-born infants should be introduced into every maternity ward It does not appear, however, that *unless the employees of a gas, electric light or telephone company have been drilled in manual methods and warned not to wait for apparatus,* the purchase of apparatus will appreciably decrease the likelihood of fatalities outside of the central works An apparatus kept at police headquarters to be sent in an ambulance is a waste of money and a probable increase of the hazards of life The general training of policemen, firemen, and especially schoolchildren in the prone pressure method would save more lives than the purchase of any amount of apparatus

As a means of partially counteracting the tendency to exaggerate the value of apparatus, the Bureau of Mines recommends that the directions which go with every piece of apparatus should include the description of the prone pressure manual method as given in Miners Circular No 8, and that there should also be printed on the outside of the case containing the apparatus, in prominent characters, words to the following effect

> If spontaneous breathing has ceased and this apparatus is not already on the spot, administer artificial respiration by manual methods without the loss of a moment, and continue to do so until the apparatus is brought Otherwise, life will be extinct before the apparatus arrives Except to remove the patient from a locality containing irrespirable gases, never carry him to the apparatus, he will be dead before he gets there

Finally, attention should be called to the value of oxygen inhalation apart from artificial respiration for men who have been "gassed" or overcome by smoke nearly or quite to the point of unconsciousness, but not of respiratory failure For this purpose the method of feeding the oxygen through a funnel suspended some inches above the patient's face, as is done in some hospitals, especially in pneumonia and illuminating gas cases, is entirely inefficient and wasteful Most of the gas blows or diffuses away, and the air inhaled is enriched by only 3 to 5 per cent of oxygen The proper administration of oxygen requires an apparatus similar in type to that by which nitrous oxid is usually given, except that there should be no rebreathing It consists of a tank of compressed oxygen connected by a tube to a rubber bag of from 5 to 10 quarts' capacity, and a mask with an inspiratory valve connected with the bag and an expiratory valve to the outside air An appliance of this sort is sold by some of the manufacturers of mine rescue apparatus, and should be included with all apparatus for artificial respiration The gas tank, rubber bag and mask are obtainable in any large city, and are easily combined[4] Such apparatus would spare many a city fireman a bad headache and sometimes a weakened heart

CONCLUSIONS

1 Universal training in the prone pressure manual method of artificial respiration will accomplish more for resuscitation from drowning, electric shock, and asphyxia than is possible by providing any amount of apparatus

2 Artificial respiration with apparatus is superior to the manual method, in that the apparatus is capable of giving a normal volume of pulmonary ventilation while the manual method is not

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[4] Illustrations and description may be obtained by application to the Bureau of Mines

3 Nevertheless the immediate application of a poor method is far more important than the application of a perfect method after a delay of even five minutes The knowledge that apparatus is available is liable to result in a neglect of immediate manual treatment in order to have the apparatus brought from a distance

4 Apparatus should be provided only in places in which it will be immediately available

5 Since all that any apparatus yet invented affords is artificial respiration with air more or less enriched with oxygen, it should be of a simple type so as not to produce exaggerated ideas of its efficiency

6 Oxygen inhalation should be used immediately in gas and smoke cases, but the apparatus employed should be such as will allow the oxygen to reach the patient s lungs in efficient concentration Such apparatus should go with every artificial respiration device

7 Investigation of the use of artificial respiration apparatus in asphyxia neonatorum is needed

A STUDY OF OPHTHALMOSCOPIC CHANGES IN NEPHRITIS *

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In this paper the tabulated histories which make up its major portion are abstracted from a series of observations made in the clinic of ophthalmic surgery of the University of Michigan, and are arranged in parallel columns in juxtaposition with the medical diagnosis and an abstract of the laboratory findings in each case While some of the cases might possibly have been somewhat differently classified, the fact that the diagnosis was made in the clinic of internal medicine in connection with the symptoms and with the many other features which could not be presented within the limits of this paper has seemed to be a sufficient reason for accepting the medical diagnosis without question

The conclusions and summaries are based exclusively on the tabulation of the features observed While this study has been carried on with a full knowledge that the ground has already been repeatedly covered, the excuse for presenting it is that it has been stimulated by a desire for a grouping of the several features of fundus changes as seen in nephritis, with reference, first, to the pathologic changes in the retina as compared with those found in the kidney, second, to ophthalmoscopic features of diagnostic value, particularly with regard to early diagnosis, and third, to the differential diagnostic value of the ophthalmoscopic fundus lesions found in the different forms of nephritis As a control, several cases of hypertension and a few miscellaneous cases presenting fundus lesions suggesting nephritis have been included

An interesting didactic discussion of the fundus lesions seen in the various forms of nephritis and a digest of the literature of this subject have been recently made by Dr A E Bulson[1] of Fort Wayne, Ind In this paper Dr Bulson mentions the fact that Sutton and Gull, Herrick, Edwards, Kelly, Rodner and others classify chronic nephritis as a part of a general angiosclerosis This series of studies does not seem entirely to support this classification or the idea that radiating macular changes are common or frequent features of interstitial nephritis

The cases included in this report have been divided into five classes, as follows A, chronic interstitial nephritis, B chronic nephritis, C, acute nephritis, D hypertension, and E, miscellaneous cases

Taking up the ophthalmoscopic notes, we find edema present in 93 per cent of the cases The fact that it was found in all cases of hypertension and in 96 7 per cent of the cases of chronic interstitial nephritis seems to indicate a vascular rather than a nephritic origin In the few cases of acute nephritis examined it was the least frequent, which tends to support such a conclusion Its relation to the blood pressure does not appear, as it was present in the cases of chronic nephritis with lower blood pressure, quite as regularly as in other chronic cases of either parenchymatous or interstitial type in the cases of acute nephritis when the blood pressure was low it was present in but 75 per cent, and in addition it was present in the one case showing rather high arterial tension Congestion and slight swelling of the disk were present in 39 7 per cent of the cases, being rather more frequent in chronic than in acute nephritis, but most frequent in hypertension

All of the cases of chronic interstitial nephritis with swollen disks of 1 D or more occurred in cases of marked increase in blood pressure Especially is this

ILLUSTRATIVE CASES FROM TABLE 1—SERIES A CHRONIC INTERSTITIAL NEPHRITIS

Medical Finding and Diagnosis	Sex	Age	Vision		Ocular Findings
			O D	O S	
3 C I 1/ /12 Diagnosis Chronic interstitial nephritis uremia dilated heart hydrothorax radial and temporal vessels sclerosed Urine Large amount of albumin granular and hyaline casts Phenolsulphonephthalein elimination [illegible] per cent in two hours Blood B P 150 to 190 R B C 3 800 000 W B C 12 700 Hgb 45 per cent blood urea 1 34 gm liter	F	48	5/10	5/6	O D Marked endarteritis arteriovenous compression dilatation Marked retinal edema flame-shaped hemorrhages exudative changes Minute exudative spots in the macula O S Rounded hemorrhages glistening white spots a few exudative changes and slight pigment change in the macula Tortuosities of the macular vessels one macular vessel silver wire Otherwise same as O D
23 V B 3/15/15 Diagnosis Chronic interstitial nephritis uremia arteriosclerosis hypertension Urine Large amount of albumin many hyaline granular and epithelial casts Phenolsulphonephthalein no elimination in two hours Blood B P 175 to 180 R B C 2 650 000 W B C 8 800 Hgb 31 per cent blood urea 2 53 gm per liter Wassermann neg	M	47	5/10	5/15	O D Disk swollen 3 D edematous and markedly congested Arteries much contracted arteriovenous compression Retina markedly edematous deep and superficial hemorrhages about the disk and macula Macula edematous O S Disk is swollen 3 D marked edema with congestion inflammatory infiltration and hemorrhages Arteries are very small Retina shows marked edema with numerous round flame shaped and superficial hemorrhages Macula shows chorioretinitis with edema

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association, Detroit June 1916

[1] Bulson A E Ophth Rec December 1915

ILLUSTRATIVE CASES FROM TABLE 2—SERIES B CHRONIC NEPHRITIS

Medical Findings and Diagnosis	Sex	Age	Vision		Ocular Findings
			O D	O S	
1 G M 12/12/12 Diagnosis Chronic nephritis secondary contracted kidney, interstitial type Urine Albumin, large amount hyaline and granular casts Phenolsulphonephthalein elimination, 3[illegible] per cent in two hours Blood B P, 230 to 216, R B C, 3 600 000 W B C, 11 200, Hgb, 66 per cent, blood urea 0 71 gm per liter	F	26	5/7	5/7	O D Nerve head swollen 4 D Hemorrhages about the disk Marked periarteritis, arteriovenous compression dilatation Retina edematous in which tortuous veins are embedded veins engorged Macular vessels corkscrewlike beginning star shaped figure O S Condition the same as O D swelling the same More numerous and more extensive hemorrhages, both retina and macula
6 A M N 4/4/13 Diagnosis Chronic nephritis, late stage mitral regurgitation Urine Large amount albumin granular casts Phenolsulphonephthalein elimination 22 per cent in two hours Blood B P, 180 to 204 R B C, 4 100 000 W B C, 25,700, Hgb, 55 per cent blood urea, 0 80 gm per liter	M	47	6/5	6/5	O D Periarteritis periphlebitis vessels tortuous marked endarteritis, arteriovenous compression Retina edematous several small hemorrhages retinal sclerotic change above the macula Macula granular and edematous O S Marked perivasculitis arteries very tortuous endarteritis arteriovenous compression Retina hyperemic marked edema Macula edematous with beginning sclerotic change

ILLUSTRATIVE CASES FROM TABLE 3—SERIES C ACUTE NEPHRITIS

Medical Findings and Diagnosis	Sex	Age	Vision		Ocular Findings
			O D	O S	
1 W H 3/1?/13 Diagnosis Acute nephritis paralysis from anterior poliomyelitis, attack four years ago Urine Albumin present granular casts Phenolsulphonephthalein elimination, 70 per cent in two hours Blood B P, 125 R B C, 4 600,000, W B C 14 500 Hgb, 75 per cent	M	19	5/4	5/4	O D Nerve head congested and edematous Marked perivasculitis veins engorged arteriovenous compression dilatation Macula edematous *O S Disk more edematous* Some endarteritis small veins tortuous Condition *practically the same as O U*
4 A B 3/25/13 Diagnosis Subacute hemorrhagic nephritis, septic tonsils Urine Albumin, small amount large numbers of red blood cells hyaline and blood casts Phenolsulphonephthalein elimination 47 per cent in two hours Blood B P, 126, R B C, 6 720 000, W B C 14 600 Hgb, 80 per cent Wassermann negative	M	24	5/3	5/3	O D Disk normal Slight endarteritis slight venous engorgement O S Disk slightly hyperemic Endarteritis and slight venous engorgement

ILLUSTRATIVE CASES FROM TABLE 4—SERIES D HYPERTENSION

Medical Findings and Diagnosis	Sex	Age	Vision		Ocular Findings
			O D	O S	
1 M C 12/19/12 Diagnosis Hypertension Urine Albumin negative no casts Phenolsulphonephthalein elimination, 72 per cent in two hours Blood B P 210 to 140 R B C 4,700 000 W B C 7,500 Hgb 100 per cent, blood urea, 0 36 gm per liter	F	48	5/5	5/6	O D Disk hyperemic Retina hyperemic and edematous one small hemorrhage Arteriovenous compression slight endarteritis Small exudate in the macula O S Disk more hyperemic Macula edematous Endarteritis tortuous arteries and veins, no hemorrhages, one exudative change below the macula (old hemorrhage?)
6 T A S 5/22/13 Diagnosis Hypertension arterial sclerosis chronic nephritis Urine Albumin, negative hyaline casts Phenolsulphonephthalein elimination, 61 per cent in two hours Blood B P systolic 232 diastolic 185, R B C 4,810 000, W B C, 9 650 Hgb, 85 per cent Wassermann negative	M	78	5/20	5/7	O D Disk hyperemic Veins engorged and tortuous periarteritis endarteritis arteriovenous compression dilatation Retina edematous area of retinal change with swelling near the disk localized detachment White spots above the disk and the superior macular region Two small linear hemorrhages O S Disk swollen 1 D edematous and hyperemic Perivasculitis small hemorrhage near the disk veins engorged, temporally the vessels are tortuous arteriovenous compression dilatation Retina edematous some scattering hemorrhages and old hemorrhagic areas Macula edematous

ILLUSTRATIVE CASES FROM TABLE 5—SERIES E MISCELLANEOUS RETINAL CONDITIONS SUGGESTING NEPHRITIS

Medical Findings and Diagnosis	Sex	Age	Vision		Ocular Findings
			O D	O S	
1 L F *3/20/13* Diagnosis Secondary anemia from recurrent uterine hemorrhages Urine Albumin, negative casts negative Phenolsulphonephthalein *elimination* 59 per cent in two hours Blood B P 170 to 180 R B C 3 900 000 W B C 3 900 Hgb, 39 per cent blood urea 0 44 gm per liter	F	19	5/6	5/6	O D Periarteritis and endarteritis veins irregular in caliber arteriovenous compression dilatation The retina is hyperemic and edematous some localized sclerotic retinal changes below the macula Macula edematous O S Sclerotic retinal changes above and below the macula also nasally Slight choroidal changes, otherwise does not differ from *O D*
7 A D 4/17/15 Diagnosis Cerebral *arterial* sclerosis moderate hypertension myocardial degeneration emphysema and chronic bronchitis Urine Negative Blood B P 130 to 172 both systolic R B C, 5 400 000 W B C 6 900 Hgb 85 per cent Wassermann negative	M	72	5/12	5/20	O D Disk somewhat swollen edematous and congested Arteries and veins irregular in caliber endarteritis arteriovenous compression dilatation Retina and macula edematous O S Essentially the same as O D Pupils unequal Reflexes absent

the case when the age of the patient is considered The one instance in which this factor was least noticeable was Case 5, Series B, even this case showed a blood pressure from 168 to 142 mm in a man of 50 Marked swelling of the disk of 1 D or more in two cases of interstitial nephritis showed retarded phenolsulphonephthalein elimination with an excess of blood urea, a marked feature in Case 23 In the chronic nephritis cases showing swelling of the disk, the white blood cells were increased in the cases in which a blood count was made, though this feature was not so noticeable in the interstitial type In the parenchymatous form elimination was retarded and blood urea increased in three cases, a marked feature in Case 10 Although in this case the swelling was not great, there were typical radiating macular changes The marked neuroretinitis in Series B, Case 17, may have been due, of course, to cerebrospinal syphilis, but there were typical radiating macular changes

TABLE 6 (SUMMARY OF TABLES 1-5)—IMPORTANT FUNDUS LESIONS AND THE DIFFERENT TYPES OF CONSTITUTIONAL DISEASES GROUPED FOR COMPARISON

	Ocular Totals		A Chronic Interstitial Nephritis		D Hypertension		B Chronic Nephritis		C Acute Nephritis		E Miscellaneous	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Total cases	73	100	30	41	13	17 8	18	24 7	5	6 9	7	9 6
Male	49	67	25	83 3	6	46	12	66 7	2	40	4	57
Female	24	33	5	16 7	7	54	6	33 3	3	60	3	43
Average age years	49		51		57		41		22		53	
Edema of the disk retina or macula	68	93	29	96 7	13	100	16	88 8	4	80	6	85 7
Congestion or slight swelling of the disk	29	39 7	11	36 6	6	46	7	39	4	80	1	14
Swelling of disk 1 D or more	11	15	6	20	1	7 7	1	22	0		0	
Periarteritis	24	33	7	23	6	46	8	44	1	20	2	28 5
Endarteritis	51	70	20	66 6	10	77	12	66 6	3	60	6	85 7
Irregular tortuous or contracted arteries	45	61 6	23	76 6	8	61 5	8	44	3	60	3	42 8
Silver wire arteries	12	16 4	9	30	2	15	1	5 5	0		0	
Corkscrew vessels	7	9 6	3	10	1	7 7	3	16 6	0		0	
Arteriovenous compression with or without dilatation	51	70	23	76 6	9	69	10	55 5	3	60	7	100
Veins irregular engorged or tortuous	48	65 7	16	53	12	92	11	61	5	100	4	57
Periphlebitis	12	16 4	3	10	3	23	5	27 7	1	20	0	
Venous thrombosis	1	1 3	0		1	7 7	0		0		0	
Hemorrhages	39	53 4	22	73 3	7	54	9	50	0		1	14
Exudates and other retinal changes	23	31 5	12	40	6	46	3	16 6	0		2	28 5
Retinal detachment	4	5 4	1* 1†	6 6	2	15	0		0		0	
Radiating or star shaped macular changes	5	6 8	1	3 3	0		4	22	0		0	
Other macular changes	22	30	13	43 3	6	46	2	11	0		1	14
Choroidal changes	15	20	6	20	2	15	4	22	0		3	42 8
Aneurysmal dilations and varicosities	3	4	1	3 3	2	15	0		0		0	
Atrophic characteristics	25	34	10	33	6	46	7	39	0		2	28 5
Inflammatory characteristics	30	41	15	50	6	46	7	39	0		2	28 5

* Double † Single

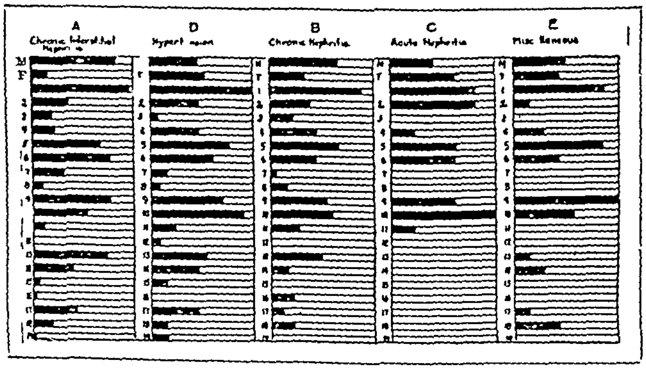

Chart 1 —Graphic representation of totals and percentages in Table 6 Each group represents the percentages of the features as they would appear in an equal number of cases M male F female 1 edema of disk, retina or macula 2 congestion or slight swelling of the disk 3 swelling of disk 1 D or more 4 periarteritis 5 endarteritis 6 irregular tortuous arteries, 7 silver wire arteries 8, corkscrew vessels 9 arteriovenous compression 10 engorged tortuous veins 11, periphlebitis 12 venous thrombosis 13 hemorrhages 14 exudates etc retina 15, retinal detachment 16 radiating macular changes 17 other macular changes 18, chloroidal changes 19, aneurysmal changes

Macular changes were present in all of the choked disk cases in parenchymatous nephritis and in three out of six cases of interstitial nephritis Three out of four of the former were of the radiating type, and one of the latter Swelling of the disk was more frequently associated with poor elimination, nephritic toxemia, on the other hand, macular changes were more degenerative in type, possibly in part dependent on the etiology of the kidney lesion, metabolic or blood toxic In one case of hypertension in which there was some evidence of nephritis, arteriosclerotic type, the disk in one eye was swollen 1 D, elimination low limit of normal, blood pressure high

Periarteritis was nearly twice as frequent in chronic nephritis as in interstitial, but why it should also be twice as frequent in hypertension as in interstitial is not easily explained

Endarteritis was least frequent in acute nephritis, and equally infrequent in the other nephritic cases It is not surprising that it should be more frequent in hypertension, as several of these cases showed evidence of general arteriosclerosis, that it should be so frequent in the miscellaneous cases is probably due to the fact that of these the first three cases showed high blood pressure, Case 4, rather advanced age, Case 5, syphilis, Case 6, degenerated kidney with low elimination, and Case 7, cerebral arteriosclerosis

Tortuous or contracted arteries seem to have been mostly associated with high blood pressure, though they were relatively more frequent in the acute than in the chronic group They are probably associated with the other vascular changes

Silver wire arteries seem to be a feature of a late stage of interstitial nephritis, 30 per cent, they were present in 15 per cent of cases of hypertension They may be dependent on the cause of angiosclerosis rather than directly on increased blood pressure

Corkscrew vessels in the *macula* were present in 10 per cent of the interstitial and 16 6 per cent of the chronic nephritis cases They are probably due to long continued interference with the terminal circulation in the retinal vessels caused by the toxic substances present in the blood in nephritis rather than to increased blood pressure, for they were noted but once in the cases of hypertension and not at all in the other cases

Arteriovenous compression was present to a marked degree, 70 per cent Judging from its regular distribution throughout all five series, this feature would seem to be symptomatic of angiosclerosis rather than to be due to the poisons which cause the nephritis or the toxic substances resulting from the kidney lesions

TABLE 7—PREDOMINATING RETINAL LESIONS

As Associated with the Following Laboratory Findings Relating to the General Disease	High Blood Pressure	Moderate Blood Pressure	Normal or Nearly Normal Blood Pressure	Slow Elimination	Normal or Fair Elimination	Amount Albumin Moderate or Large	Amount of Albumin Small or Absent	Low Red Blood Cell Count	High White Blood Cell Count
Number of cases of each feature (in boldface)	**53**	**8**	**5**	**21**	**16**	**31**	**33**	**19**	**13**
A Chronic interstitial nephritis, 30 cases	**30**	**0**	**0**	**7**	**7**	**15**	**15**	**11**	**5**
Congestion or slight swelling of disk	11			4	2	3	4	2	
Swelling of disk 1 D or more	6			2		6		3	
Arterial changes and tortuosities	20			7	6	15	13	11	4
Silver wire and corkscrew arteries	8			3	2	3	7	5	2
Arteriovenous compression	23			5	6	9	12	6	3
Changes or tortuosities in veins	16			2	5	9	8	5	2
Hemorrhages	22			7	4	10	4	9	2
Exudates and other retinal changes	8			2	2	5	6	2	1
Radiating macular changes	1					1		1	
Other macular changes	13			5	1	5	6	6	1
D Hypertension 13 cases	**12**	**1**	**0**	**3**	**4**	**2**	**11**	**1**	**0**
Congestion or slight swelling of disk	4			2	1	2	2		
Swelling of disk 1 D or more	1								
Arterial changes and tortuosities	9	1		2	4	1	10	1	
Silver wire and corkscrew arteries	4	1		1		1	2		
Arteriovenous compression	5	1		2	3	2	8		
Changes or tortuosities in veins	6	1		3	3	2	9	1	
Hemorrhages	7			1	2	2	4		
Exudates and other retinal changes	6				4		5		
Radiating macular changes									
Other macular changes	6	1				1	2		
B Chronic nephritis 10 cases	**10**	**7**	**1**	**9**	**4**	**12**	**6**	**7**	**5**
Congestion or slight swelling of disk	3	2		2	1	3	2	1	1
Swelling of disk 1 D or more	2	2		4	1	2	2	2	2
Arterial changes and tortuosities	9	5	1	6	2	11	6	7	4
Silver wire and corkscrew arteries	1	2		2	1	1	2	4	3
Arteriovenous compression	6	2	1	6	2	6	5	6	5
Changes or tortuosities in veins	6	2	1	6	2	6	5	5	5
Hemorrhages	5	4		5	2	6	3	4	3
Exudates and other retinal changes	1	1		2		2	2	1	1
Radiating macular changes	2	2		2		3	1	1	1
Other macular changes	2	1		2	1	2	1	1	1
C Acute nephritis 5 cases	**1**	**0**	**4**	**2**	**1**	**2**	**3**	**0**	**3**
Congestion or slight swelling of disk			3			1	2		2
Swelling of the disk 1 D or more									
Arterial changes and tortuosities	1		4	2	1	2	3		2
Silver wire and corkscrew arteries									
Arteriovenous compression			3	1	1	1	2		2
Changes or tortuosities in veins	1		4	2	1	2	3		3
Hemorrhages									
Exudates and other retinal changes									
Radiating macular changes									
Other macular changes									

Venous tortuosities and irregularities were relatively most frequent in the acute cases, but they were present in 65 7 per cent of all, and in 92 per cent of hypertension cases They are probably caused by both toxic retention and angiosclerotic changes The same observation might be made with regard to periphlebitis, though it was relatively quite infrequent

Hemorrhages were present in 53 4 per cent of all cases Interstitial nephritis showed hemorrhages in 73 3 per cent , hypertension and chronic nephritis in 54 and 50 per cent, respectively They were absent in the acute cases and present in a case of chronic bronchitis — Series E, Case 4 In this case, although the blood pressure was only 135 mm of mercury, and the urine was normal, there were distinct evidences of retinal angiosclerosis in the eye in which the hemorrhage occurred This case was the only one in the series having a low blood pressure In all the other cases of retinal hemorrhage, increased blood pressure was a prominent feature, excepting in some of the cases of chronic nephritis Retarded or markedly deficient elimination was present in 70 per cent of cases showing hemorrhages They were more frequent in cases having a large amount of albumin than in those showing a small amount, in the ratio of 4 9

Retinal detachment was present only in interstitial nephritis and hypertension In one case the detachment was bilateral and rather extensive, in the other cases the detachment was small, and occurred in only one eye All these cases showed a distinctly high blood pressure In the two detachment cases in which the elimination test was made, Cases 3 and 6, Series D the result gave the low limit of normal

Macular changes were mentioned in connection with the cases of severe optic neuritis, there remain, however, a few interesting features The radiating type so commonly mentioned as characteristic of nephritis was present in only 6 8 per cent of all cases Of these, it was present in 22 per cent of the chronic nephritis cases, and in only one, or 3 3 per cent of the interstitial nephritis cases In the latter case Series A, Case 14, the blood pressure was high elimination retarded blood urea increased In two of the cases found in chronic nephritis there was high blood pressure, three showed marked swelling of the disk in the fourth the disk was congested Elimination was low and blood urea increased or high in the cases in which this test was made Radiating macular changes may therefore be said to be nephritic toxic with high blood pressure and angiosclerotic changes uniformly present

Other macular changes were found to be the most prevalent in interstitial nephritis 43 3 per cent, and in hypertension, 46 per cent They were a feature of 11 per cent of chronic nephritis In the interstitial type high blood pressure was present in every case of a typical macular change The majority of these cases in which these tests were made showed low elimination and high blood urea From these cases it would seem that as regards etiology, both radiating macular changes and atypical macular changes are nephritic toxic and angiosclerotic, associated with high blood pressure, but that the former are more common in chronic nephritis, while the latter are more common in interstitial nephritis and hypertension

The choroidal changes noted are not easy to account for, but as they were more prevalent in interstitial nephritis and hypertension, they are probably angiosclerotic in origin, though a definite sclerosis of the choroidal vessels was made out in but one case, one of interstitial nephritis They were noted in three of the cases in Series E, where they seem to have been associated with no particular type of lesion

The thirty cases showing changes of an inflammatory type include the cases of optic neuritis exudative retinitis, macular exudates, etc They seem to have considerable relation to a retarded elimination, increased blood urea, and frequently to an increase in the white blood cells

Atrophic changes apparently have less significance than inflammatory changes, and are more difficult to explain in these groups In the main they were associated with high blood pressure and fairly good elimination

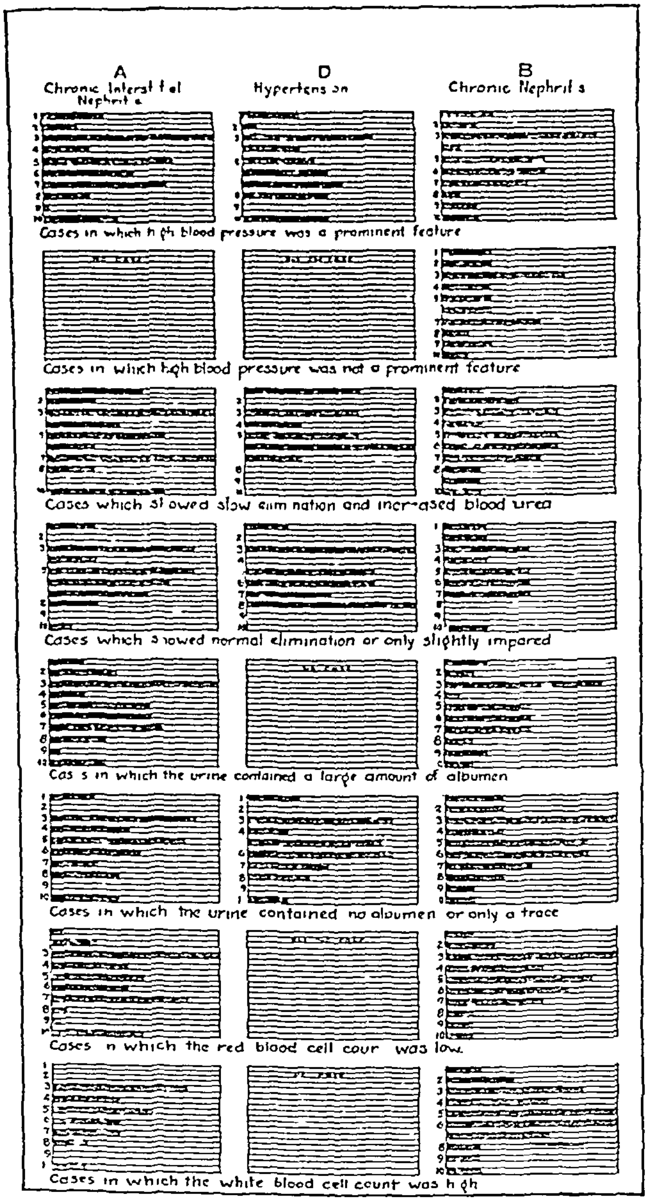

Chart 2 —Graphic representation of totals and percentages in Table 7 Each group represents the percentages as they would appear in an equal number of cases the grouping being based on the laboratory findings in the general examination instead of the diagnosis 1 congestion or slight swelling of disk 2 swelling of disk 1 D or more, 3 arterial changes and tortuosities 4 silver wire and corkscrew arteries 5 arteriovenous compression 6 changes or tortuosities in the veins 7 hemorrhages 8 exudates and other retinal changes 9 radiating macular changes 10 other macular changes

As far as this series goes aneurysmal dilatations appear most frequently in cases of angiosclerosis with hypertension

Table 7 and Chart 2 were made for the purpose of showing the relation between the more prominent laboratory features of the different types of nephritis and the more common or characteristic fundus lesions found in each type Inasmuch as edema was so generally present, it was not thought best to take up this feature in Table 7 Choroidal changes are found in such a large number of general conditions that they hardly seem to be a distinctive feature of nephritis, they are also omitted The remaining eighteen findings are combined under ten headings and placed under the captions of Series A, B, C and D Next the ophthalmoscopic features of these subdivisions are correlated to the most interesting laboratory findings

The number of acute cases presented in this series is far too small to warrant definite conclusions being drawn, in the cases examined, however, there were almost no lesions other than edema and slight vascular changes The diagnostic or prognostic value of such ophthalmoscopic findings seems to be very slight

In the cases of interstitial nephritis the serious retinal changes seen in high blood pressure are numerous and significant and the fact that these are, to a large extent, dependent on angiosclerosis seems to be established by the occurrence of these lesions in much the same relative frequency in hypertension The much smaller percentage, 55 5 of high blood pressure in the cases of chronic nephritis is worthy of notice especially when we find nearly as large a percentage of serious retinal lesions in the seven cases having moderately increased blood pressure In the one case of chronic nephritis having a nearly normal blood pressure the lesions were practically the same as those seen in acute nephritis, which is also a fact in the one case of moderately increased blood pressure in Series D, hypertension, with the single exception of a silver wire artery observed in this case These facts support the belief that many of the serious fundus lesions of nephritis are, in part at least, dependent on some other factor than angiosclerosis.

Pursuing this subject further, the striking fact appears that three out of four cases of so-called choked disk were seen in chronic nephritis with slow elimination, while but two out of six similar cases, marked swelling of the disk, were seen in slow elimination in interstitial nephritis, and none in hypertension. A similar distribution of fundus lesions in chronic nephritis appears in cases showing slow elimination; less than one fourth of Series B had normal or fair elimination, and if one choked disk, one silver wire artery and two cases with hemorrhagic lesions may be excepted, good elimination seems to be protective of the fundus in chronic nephritis. In interstitial nephritis good elimination appears to offer less protection, for there were seven cases in each class, that is, in slow elimination and normal elimination, and there were nearly as many retinal lesions in the one as in the other, although the lesions were slightly more numerous in the cases in which elimination was slow; for example, there were two cases of choked disk and nearly twice as many hemorrhages in the latter condition, which goes to show that even in angiosclerotic cases, toxemia often plays a significant part.

From the standpoint of the amount of albumin found in the urine, there are in interstitial nephritis fifteen cases in which the amount was large, and an equal number with a small amount. All the cases of choked disk found in interstitial nephritis were present in cases in which the albumin was in large amount. The silver wire and corkscrew arteries were more numerous with a small amount of albumin, while hemorrhages were much more numerous where the amount was large. In chronic nephritis, on the other hand, there were twice as many cases with hemorrhages having a large amount of albumin. Two cases of choked disk were found in both large and small amounts of albumin. Of the other fundus lesions found in albuminuria, hemorrhages seem to have been about equally distributed, although they were relatively a little more frequent in small amounts of albumin than in large; this perhaps goes to show that when considered in relation to both angiosclerosis and slow elimination, toxemia and its results in the production of fundus lesions are not closely related to the amount of albumin found in the urine in any given case. Albuminuria does not appear to have had much if any significance in the cases of hypertension, and almost none at all in the acute cases seen.

Low red blood cell count, as indicating relative anemia, is of more than passing interest. Three of the six cases of choked disk in interstitial nephritis, two of the four cases of choked disk in chronic nephritis, 50 per cent. of each, showed this feature; silver wire arteries and hemorrhages were also, though in less striking degree, features of low red blood cell count. The one case of relative anemia in hypertension showed nothing striking.

Only five cases of interstitial nephritis, 16.7 per cent., showed an increased white blood cell count. The lesions seen in this series could all be attributed to angiosclerosis. On the other hand, there were five cases of chronic nephritis, 27.7 per cent., having a high white blood cell count. Choked disk appears here in two cases, 50 per cent. of the cases found in chronic nephritis. Silver wire or corkscrew arteries were also relatively numerous, though there was but one case showing hemorrhages. Three out of the five cases of acute nephritis had a relatively high white blood cell count; there were no cases of relatively low blood red cell count in this series. There seemed to be no relation between either the red or white blood cell count and the ophthalmoscopic features of acute nephritis.

The relation between the histopathology of the renal lesions of nephritis and that of the fundus lesions found with the ophthalmoscope in nephritis and hypertension is quite as interesting as the relation between these findings and the features of nephritis already discussed. In each case we have an organ made up largely of highly differentiated epithelial cells, differing widely as to embryologic origin, but each bound together by a supporting framework, and each having a rich and peculiar type of vascular organization and blood supply.[2] As in diseases of the kidney, so in diseases of the retina, the changes which take place are of a degenerative type, often dependent on the associated or preceding vascular changes.

Edema, which was common to all classes and almost constantly present, occurs in the earliest stages of retinitis as a diffuse edema affecting the disk, retina and macula. It gives rise to a watery haziness or opalescence, with increase in the retinal depth as measured by the ophthalmoscopic parallax. Later, localized edema may occur in the retinal substance forming cystic spaces, which may become filled with hyalin or fat derived from the degenerating arterioles with subsequent formation of cholesterin crystals. When the spaces become large and distended, they may rupture externally, giving rise to subretinal fluid with detachment. As a result of the pressure, edema and intracystic exudate, the nerve elements degenerate, the fluid filling the spaces changes to hyalin, and more or less well defined white spots or areas develop. In the severe types, endothelial leukocytes may penetrate the hyaloid boundary and lead to the formation of white bands, or in more severe cases to proliferating retinitis.[3]

The vascular changes on which the retinal changes, to so large a degree, depend, are generally the result of hyalin necrosis with fat formation due to changes in the intima. Endarteritis is followed later by deposits of lime salts in the necrotic areas of the intima. The perivascular changes are due either to albuminous exudate followed by hyalin deposits in the perivascular sheaths, or to a peculiar type of hyalin degeneration seen in other parts of the central nervous system, in which there is deposited around the wall of the artery minute droplets of hyalin which fuses to form a complete sheath for the vessel; the cause of this formation is not known; calcification often occurs.[4] Hemorrhages when small may undergo complete absorption through the activity of the endothelial leukocytes. If large, the blood pigment may be partially absorbed through the same means, while fatty degeneration of the coagula followed by cholesterin formation and the development of cystoid spaces, with hyalin and other changes, may lead to permanent white patches more or less associated with unabsorbed irregularly arranged blood pigment.[3]

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[2] Although the choroid is not a part of the retina, it is the source of nutrition for the outer retinal layer.

[3] Parsons: Pathology of the Eye, iv, 1298.

[4] Mallory: Principles of Pathology and Histology, p. 444.

Leaving the retinal side of the picture and turning to the kidney lesions, we find here also that vascular changes are frequently the predominating feature of the several forms of the disease, with, in addition, the peculiar degenerative processes which take place in the various tubules Here too we see hyalin and fatty changes in the vessel walls, and in addition, in the epithelial cells of the tubules While amyloid appears in the vessel walls I find no mention of its appearance in retinal disease, as amyloid, however, appears to lead to hyalin thickening with gradual occlusion of the vessel lumen, it might be found in the retina also in cases in which an artery becomes obliterated Amyloid appears first in the glomeruli and the smaller arterioles and later forms around the tubules, leading to colloid and hyalin degeneration of the epithelium of the tubules

In the toxic form of acute tubular nephritis, marked necrotic changes are seen in the epithelium of the tubules, associated with inflammatory reaction lymphocyte infiltration, leukocyte migration, etc Inasmuch as this type of cases was so nearly absent from the series under consideration, no retinal relation need be discussed, but inasmuch as similar changes sometimes take place in the heart and liver in toxic conditions, it seems not unlikely that the same definite relation may sometimes be established

Toxic glomerular nephritis presents certain peculiar features in which we have (*a*) the capsular type with inflammatory exudates into the capsular space and degeneration of the capsular epithelium, or in some cases proliferation of the capsular epithelium, and (*b*) the intracapillary type in which the glomerular capillaries are involved, with intracapillary fibrin formation and the accumulation of leukocytes, without much epithelial involvement Inasmuch as the types of glomerular nephritis are due to toxins which often have a general distribution, and as they are more or less of an inflammatory character, one might expect that an associated reaction in the retina would also take on an inflammatory character, as would be shown by neuroretinitis, papillitis, periarteritis, periphlebitis exudates, etc In the clinical classification of chronic nephritis, in which there were several cases showing toxemia, etc, inflammatory retinal changes appeared to be prominent features

In chronic interstitial nephritis there is present endarteritis affecting the inner fibrous layer and the endothelium, such as occurs in the vessels in general arterial sclerosis The necrotic process attacks the cells of the intima, particularly the fibroblasts, necrosis occurs, and the endothelial leukocytes are set free When regeneration occurs there is an overproduction of new elements with consequent narrowing of the vessel If the endothelial cells degenerate, fibrous thrombi may follow, leading to irregular thickening and localized occlusion of the vessel, secondary sclerosis and disappearance of glomeruli follows When the occlusion is rapid, hemorrhage into the glomeruli may result The vascular changes are followed by degeneration and atrophy of the renal epithelium, with contraction and apparent increase of the connective tissue elements[5]

In the latter part of this paragraph the intimate relation between the destructive effects of the vascular degeneration in the kidney and in the retina can be forcibly expressed by substituting the words retinal elements or retina for glomeruli, and the same words for renal epithelium, as follows secondary sclerosis and disappearance of the retinal elements follows When occlusion is rapid, hemorrhage into the retina may result The vascular changes are followed by degeneration and atrophy of the retinal elements Note the relatively large number of features 13, 14, and 17, Chart 1, in chronic interstitial nephritis and hypertension

ABSTRACT OF DISCUSSION

Dr Albert E Bulson, Jr, Fort Wayne, Ind The fundus lesions that may accompany persistent high blood pressure and the various types of nephritis are due to the presence of toxic substances in the blood The character and extent of the retinal lesions depends on the virulence of the toxic substances, the stage of the angiopathic disease, and the resistance offered by the vascular structures of the eye In chronic Bright's disease we may find in the retina any or all of the changes resulting from vascular disease In the class of cases characterized by edema with abundant albuminuria and cylindruria we are more apt to have marked hyperemia and exudation in the retina, whereas in cases with marked cardiovascular changes relatively slight albuminuria and cylindruria and abundant urine of low specific gravity, the retinal changes are more apt to be of the degenerative type, and present sclerosis of the arteries full and tortuous veins hemorrhages and atrophy In the early stages of nearly all cases we have more or less hyperemia and exudation The fundus changes in chronic Bright's disease are ophthalmoscopically indistinguishable from the vascular degenerative changes that may occur as a result of infection in scarlatina measles, erysipelas malaria, syphilis, and lead poisoning, and the ophthalmoscopic picture of so-called acute albuminuric retinitis is the same as that presented by the chronic form of retinitis in the exudative stage, but without the arteriosclerotic changes Even the macular star or radiating exudates around the macula, formerly thought to be pathognomonic of Bright's disease, have been found in syphilis It is suggested, therefore, that while the fundus changes in any case of symptomatic retinitis may suggest strongly the nature of the general disease, they cannot alone be considered as strictly diagnostic Even the presence of albumin and casts in the urine is subject to great variation and the existence of advanced nephritic changes may not be evidenced by the finding of either albumin and casts in one or even more samples of urine It is in this latter class of cases that the retinal lesions, while in themselves suggestive of the underlying cause, must await the discovery of other clinical findings before becoming of diagnostic importance The earliest lesions are not those embraced in the well known picture of albuminuric retinitis, but the less pronounced lesions which when made the basis of more extended study of the case lead to a diagnosis that may mean prolongation of the life of the patient In the final analysis, therefore the fundus lesions that we commonly see in angiopathic disease and described in connection with nephritic cases, even though strongly suggestive are of diagnostic and even prognostic importance only when considered in connection with the history and other clinical findings and the latter may require repeated chemical and microscopic examinations of the urine repeated blood pressure findings, and exhaustive blood examinations

Dr E E Blaauw Buffalo Nephritis is not so much an anatomic study as a study of function At present the viewpoint has reference to the retention of sodium chlorid or the retention of urea in the blood stream, conditions entirely different from interstitial nephritis The question of vascular disease should be entirely distinct from nephritis With changes in the urine there may be changes in the kidney but the etiologic factors are entirely different In 125 cases we found only five cases of fundus changes which shows that it needs a great many more cases to come to a percentage decision

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[5] Mallory Principles of Pathology and Histology p 507

Dr Edward J Bernstein, Kalamazoo, Mich Will the author please explain what he means by hypertension, and by high blood pressure? Many of us are under the impression that hypertension means high blood pressure I should like to ask how the author arrives at a differential diagnosis in nephritic troubles when there are neither casts nor albumin in the urine

Dr G E de Schweinitz, Philadelphia It is worth while to emphasize that the so-called diagnostic or characteristic eyeground of nephritis is not really a characteristic eyeground I believe that there is a period in the progress of nephritis which we may call what the French speak of as the incidence of nephritis It consists in a curious change in the nerve head It is important also to emphasize the fact that we are not yet prepared to speak of the diagnostic eyeground in relation to the clinical symptomatology Because a man has some retinal changes he must not be condemned to death in one year or eighteen months He may die within such period after changes have been found with the ophthalmoscope, but not necessarily so Under modern treatment prolongation of life to many months and even years is possible

Dr S D Risley, Philadelphia We should speak of these retinal changes as being a toxic retinitis instead of a nephritic retinitis, because these same changes are present in kidney disease and other toxic affections They may be associated with cardiovascular disease which is associated with kidney affections and with other nutritional diseases It is a very rare case of glycosuria in which we do not find this toxic retinitis present

Dr Edward Jackson, Denver Conservatism in prognosis is a good thing to cultivate A case in point is that of a man with very marked instability of the nervous system, vascular retinal changes, typical, as we supposed, of high blood pressure He took up golf and has devoted two or three afternoons every week to it, where he had done nothing of the kind before He has been under my observation some six years and prognosis from a retinal examination today would be entirely favorable Another case typical of vascular change happened in a woman of 60 That patient lived without any particular change of habits for over six years, with gradual deterioration of vision but with not much other change that could be connected with the retinal condition A third case is that of a medical friend who accidentally, in good health, discovered that he had a systolic blood pressure of 235 mm He has been able to reduce it to 180 He is comparatively young—under 40 He has changed his method of life largely, but continues in good health, and with very little change in his retinal vessels

Dr Walter R Parker, Detroit One interesting fact elicited by this work was the relation of the swelling of the nerve in every case to, or its association with, faulty elimination No matter where we classify it, we have faulty elimination when there is swelling in the retina and in the nerve head

Dr George Slocum, Ann Arbor, Mich We classify diseases by the grouping of symptoms as based on clinical observation A patient with chronic interstitial nephritis will live to be old Patients with chronic nephritis with large white kidney seldom live to be old Of course no case of chronic nephritis exists a long time without vascular changes We must always await the laboratory diagnosis in the great class of cases No internist makes a diagnosis of nephritis, or even of the type of nephritis, until he has made a careful study of his laboratory findings, not from one examination, but a series of examinations

As to what is hypertension as contrasted with high blood pressure, if we have high blood pressure existing by itself, with no other discoverable predominating feature, I understand it has been the custom in the clinic to diagnose hypertension, otherwise the case was diagnosed according to the features found by laboratory study As to how to make a differential diagnosis in the various forms of nephritis when neither casts nor albumin are present, I am unable to answer that question Inasmuch as these cases were diagnosed in the clinic of internal medicine, I did not think it necessary to go into the diagnosis One point you will note, that the only ophthalmoscopic feature that appeared in the nephritis cases was radiating macular changes In our clinic a number of years ago we had a case of radiating macular figure as typical as could be, and at last report the patient was alive and well There were no laboratory findings, at least, no nephritis was present in this case, but it was striking that the radiating macular figure was present in one eye only Other cases of similar type have appeared, but as to their subsequent histories I am not informed

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PARENCHYMATOUS DISEASE OF THE LIVER A CAUSE FOR RISE IN PORTAL BLOOD PRESSURE

C F HOOVER, MD
CLEVELAND

In attempting an explanation for ascites in hepatic cirrhosis, we must consider the blood pressure and minute volume of flow in the aorta and cava If the pressure and flow of blood in the aorta and cava are unchanged, then obviously the only hydraulic considerations are those which may affect blood pressure within the portal vein

There is an abundance of evidence from pathologic sources to prove that ascites may be caused by stenosis of the portal trunk from pylephlebitis In many instances of hepatic syphilis, ascites is due solely to this source If the portal pressure is gradually raised during a long period of time, anastomoses form which may be sufficient to keep the portal pressure sufficiently low to prevent ascitic accumulations But these factors alone are not sufficient to explain why some cirrhoses of the liver are attended with ascites and others are not when the entire group of ascitic cases are uncomplicated with disease of the radicles, trunk or large branches of the portal vein Pathologic histology fails to explain why only one of two cirrhotic livers may produce ascites So far as gross appearances and histologic findings go, we lack an explanation for ascites in the amount and distribution of fibrous tissue throughout the liver

From our clinical experiences in the study of pylephlebitis and portal anastomoses with tributaries to the cava, it seems clear that a rise in pressure in the portal vein must precede ascites Here, however, we encounter experiences which are very disconcerting to this view of ascites if we see in a rise of portal vein pressure only an expression of obstruction to the portal flow from fibrous tissue formation Every clinician sees patients with typical alcoholic cirrhosis who will have ascites which accumulates very rapidly The ascitic fluid is drawn off one or more times, and, in spite of the fact that there is no demonstrable change in the hepatic signs, the patient will live for some years without a return of ascites

There is then some temporary alteration in the liver which causes ascites Thus far I have never read of any direct evidence which goes to prove that these transient periods of ascites are dependent on a coincidentally transient rise in portal pressure The rise in portal pressure with its consequent ascites cannot bear any relation to fibrous tissue formation The cause must lie in some other source of resistance to the portal flow of blood

The portal cirrhosis in cases of this kind proceeds uninterruptedly, and the source for increased portal pressure and ascites must obviously be sought elsewhere than in the cirrhotic process. F. C. Herrick[1] made a comparative study of the minute-volume flow through the portal vein and hepatic artery in normal livers and in the livers of interstitial hepatitis removed at necropsy. Herrick found that interstitial hepatitis did not cause any obstruction to the flow of normal salt solution or defibrinated blood. Perfusion of the portal vein of cirrhotic livers gave as large a minute-volume flow as that procured from perfusion of normal livers. He did not find, however, that the anatomic interrelation between portal vein branches and hepatic arterial branches was very different in cirrhotic livers from the interrelation between the vein and artery of normal livers. In cirrhotic livers the portal pressure rose much higher under the influence of elevated pressure in the hepatic artery than it did in normal livers.

Herrick's experiments show that there is a different relation between the hepatic arterial branches of the portal vein from that which exists normally. But what vitiates the significance of his results is the fact that the minute-volume flow through the hepatic artery in Herrick's dead livers was in all cases greater than the minute-volume flow through the portal vein. In life the reverse is true, the minute-volume flow through the portal vein being twice as large as the arterial minute-volume. This disparity between the results of postmortem perfusion and the measurements of minute-volume blood flow in vivo can be accounted for by a loss of vasomotor arterial tone in the dead livers. In the portal vein, however, the vasomotor supply to the intrahepatic branches is very feeble. Although Herrick does not offer a satisfactory explanation for the portal vein pressure in hepatic cirrhosis, he does show that the interstitial fibrous tissue of a portal cirrhosis will not account for an elevation in pressure within the portal vein.

The state of the liver cells and edema of the liver have been neglected in considering the causes for rise of the portal pressure in hepatic cirrhosis.

The clinical histories of hepatic cirrhosis contain periods of subacute exacerbations of symptoms from the biliary and portal systems, for example, transient cholemia with transient ascites. During these subacute exacerbations the liver increases much in size and becomes tender to pressure. As cholemia and ascites subside, the liver grows smaller and is no longer sensitive to pressure. There has always been a lack in the chain of evidence, however, to prove that these transient ascites are really associated with an elevation of pressure in the portal vein.

We recently had in our wards at Lakeside Hospital a patient who supplies the wanting link in the chain of evidence to prove that these attacks of subacute parenchymatous hepatitis are actually accompanied by a rise in portal blood pressure.

REPORT OF CASE

CASE 1.—F. K., man, aged 35, had used alcoholics in excess during his adult life. Three weeks before he was admitted to the hospital he noticed that his feet, legs and abdomen were swollen. He stopped work and quit drinking alcoholics for a few days and the swelling disappeared, whereupon he resumed work and also the use of beer and whisky. Ten days before entering the hospital the swelling in his lower extremities and abdomen returned, and he became jaundiced for the first time.

When admitted to the hospital the patient was jaundiced, there was edema of the feet, legs and scrotum, and a great amount of ascitic fluid behind which a large hardened liver could be palpated a hand's breadth below the costal margin. There was no free fluid in the pleural or pericardial sacs, and there was not the slightest evidence to indicate any disturbance in the cardiovascular or pulmonary systems. The right auricle and left ventricle were not enlarged. The blood pressure was 130 systolic and 90 diastolic. The temperature was 102. The urine contained bile pigment and bile salts and a slight trace of albumin. In the sediment were a few hyaline and granular casts. There was a well developed caput medusae in the supra-umbilical region. Midway between the umbilicus and the ensiform cartilage to the left of the median line was a veritable bulbus venosus over which there was a palpable thrill and a loud venous hum.

Two days after entering the hospital the abdomen was tapped and 8,000 c.c. of a clear yellow serum removed. The specific gravity was 1.005, albumin 4.5 gm. per liter, and there were 180 cells per cubic millimeter.

The cells were largely mononuclear. The blood was drawn from a vein into a 1 per cent potassium oxalate solution and centrifuged. The plasma was deeply tinged with bile pigment, and when dialyzed from a collodion sack against equal parts of alcohol and water, the dialysate contained both bile pigment and bile salts. The plasma gave no reaction to the paraldehyd test for urobilin, but the urine contained an abundance of urobilin as well as both bile pigment and bile salts. The stool was dark colored and gave a reaction to urobilin which was still visible spectroscopically when the daily stool was diluted to 1 liter with water and a part of this mixture was again diluted 1:2,500 with water. The concentration of bile pigment in the plasma was much greater than in the ascitic fluid. The blue-green band between the coagulum and plasma which occurs when nitric acid is poured beneath the plasma was very marked, but when the nitric acid contact test was made on the ascitic fluid the color band was very faint. The patient's fever rose as high as 102 November 11, the day of admission. On November 12 and 13 the temperature rose as high as 103 and 100, respectively. The blood contained 5,180,000 red blood corpuscles, 6,400 white blood corpuscles, and hemoglobin 85 per cent (Talqvist).

Between November 13 and 22 the temperature declined to normal and remained normal for the remaining four days that the patient was in the hospital.

Several notable things occurred during the interval between November 13 and 22. The venous hum over the caput medusae was unaffected by the removal of the ascitic fluid. It was quite as loud after the intra-abdominal pressure was relieved as it was before the tapping, but by November 22, nine days after the tapping, the murmur and thrill over the caput medusae were gone, although the venous anastomoses were as plainly visible as before. In the interval of nine days above referred to, the ascites entirely disappeared. The liver grew much smaller. The liver border ascended three finger breadths so that the lower sharp edge was palpable only about an inch below the costal margin at the nipple line. The left and right lobes of the liver diminished proportionately in size and all liver tenderness was gone. After the third day, there were no longer any casts or albumin in the urine. All these changes occurred independently of any alteration in the size of the heart or change in blood pressure in the aortic system. November 17 the urine still contained bile salts and bile pigment but the urobilin content of the stool was enormously increased, as the retention of bile in the blood had ceased and a marked hypercholia was instituted as the liver began to eliminate the large amount of bile and bile salts which had accumulated in the blood. The patient was greatly improved in all symptoms, and the stool showed the test for urobilin in dilutions of 1:44,600 whereas on entrance the test showed only in dilutions as high as 1:2,500. The patient was evidently recovering from his acute hepatitis, and the liver was recovering its biliary function. November 22, nine days after admission, the urine no longer contained bile salts or bile pigment nor were there any biliary elements found in the urine during the remainder of his stay in the hospital, which terminated November 26.

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[1] Herrick, F. C.: Jour. Exper. Med., 1907, ix, 93.

November 26, the murmur and thrill over the caput medusae were gone, and there was no free fluid in the abdomen or edema elsewhere in the body. The liver was much diminished in size. The jaundice was much less marked, there was no choluria, and the oxalate plasma showed a great diminution in the cholemia. There was still sufficient bile pigment to give the nitric acid contact test, and the dialysate from the plasma gave Hammarsten's test for bile pigment, but Pettenkofer's test for bile salts in the plasma dialysate was negative.

COMMENT

In the size of the liver, the improvement in the cholemia and recovery from choluria, and the great intestinal hypercholia and recovery from ascites, we have the clinical picture of recovery from a subacute hepatitis. Coincidentally with this improvement, the murmur and thrill in the caput medusae disappeared. The murmur in the caput medusae is due to two factors, namely, the conformation of the venous channel and the velocity of the blood stream. The character of the blood was unchanged, and the conformation of the veins remained the same, the only change was in the velocity of the blood in the anastomotic veins. The velocity of the blood in this location was an expression of the disparity between the pressure in the portal vein and in the superior vena cava. It indicated the transit of blood from a field of high pressure to a field of low pressure. When the portal pressure diminished with recovery from subacute hepatitis, the disparity between the portal vein and cava pressures grew less and the velocity of the venous current diminished sufficiently to make the thrill and murmur disappear. The effect of posture on the venous hum at the bulbus venosus in the right supraclavicular region illustrates with what delicacy the critical point of velocity in the venous stream is determined at which a murmur will develop.

If a patient who has a venous hum of anemia sits upright, the hum will be loud at the bulbus venosus. If the patient is slowly let down from the upright toward the recumbent position, an angle of inclination will be found at which the murmur ceases. If the patient sits upright, the murmur is very loud in a given instance. When the patient is let down toward the horizontal position, the murmur will still be loud when the trunk forms an angle of 35 degrees with the bed. If he is let down further so that the trunk forms an angle of 30 degrees with the bed, the murmur is no longer audible. The angle at which the murmur will disappear varies in different cases, but in all cases the critical point at which the murmur disappears is sharply defined. The transition from a loud murmur to silence over the bulbus venosus occurs within a change in inclination of the body of a very few degrees. In nearly all cases of anemia, the murmur ceases before the patient reaches the horizontal position. I have found only two exceptions to this rule, and they were both in patients who had anemia due to lead poisoning and who, in addition to their anemia, had an elevation of systolic and diastolic blood pressures, due to hypertonus of the splanchnic arteries. In both these cases the murmur was still loud when the patients were in the horizontal position. The murmur did not disappear until the foot of the bed was elevated about 2 feet from the floor. This of course involves the question of minute-volume flow through the encephalon attending splanchnic arterial hypertonus. However this may be, the observations prove that employment of gravity shows how delicately the velocity of the venous current determines the appearance or disappearance of the venous hum.

To return to our cirrhotic liver patients. In the caput medusae there was a loud venous hum and palpable thrill before and after the ascitic fluid was withdrawn, without any alteration in the hydraulics of the systemic blood flow, the murmur disappeared coincidentally with recovery from the subacute parenchymatous hepatitis, and furthermore, after recovery from all the signs of acute hepatitis, there was no return of the ascites. It seems, therefore, that we have very good proof that subacute parenchymatous hepatitis in the course of chronic interstitial alcoholic cirrhosis may cause sufficient elevation in portal blood pressure to produce a large ascitic accumulation which does not reaccumulate when the portal pressure is lowered.

In Case 1, the liver was enlarged and sensitive. The tenderness on pressure was due to the bursting tension of Glisson's capsule and not to perihepatitis. The liver was equally sensitive over the entire breadth of the right and left lobes, and there was no perihepatic friction palpable or audible. The ascitic fluid had all the characteristics of a transudate.

In Case 2, there was an acute afebrile disease of the liver accompanied by ascites and intense jaundice and attended with grave signs of intoxication ascribable to impairment of hepatic function, but, during the height of the disease, the consistency of the liver was diminished and there is evidence to show that the tension of Glisson's capsule was less than normal during the period in which ascites accumulated.

REPORT OF CASE

Case 2.—A man, aged 21, admitted to Lakeside Hospital Oct. 12, 1911, and discharged Dec. 19, 1911, had been observed to have jaundice two weeks prior to admission. The patient was confined to bed only one week before he was brought to the hospital. On admission there was intense jaundice, an abundance of bile in the urine, and the stools showed no indication of a want of bile. The pulse was 52. The heart was not enlarged, the systolic arterial pressure was 130, and the diastolic pressure 90. The temperature was 98. The liver was enlarged and slightly sensitive to pressure. The hepatic area of dulness in the nipple line extended from the fifth rib to 3 cm. below the costal margin. The hepatic edge was easily palpated, and the liver was sensitive to pressure. The spleen had an enlarged area of percussion dulness, but did not reach quite to the costal margin. The abdominal wall was rather firm, and did not admit palpation of the splenic border. The subsequent clinical course shows further progress in hepatic disease to the point where marked hypocholia, ascites, hemorrhages, acidosis and violent convulsions all developed. During this period there were no evidences of cardiac or renal impairment. Then followed signs of recovery with a transient increase of cholemia, which had subsided during the hypocholic period.

During the period of maximum severity of the disease when hypocholia, hemorrhages, ascites and convulsions all developed, the liver diminished in consistency, and had a lowered tension of Glisson's capsule.

During the subsequent period of recovery, the liver regained its original size and consistency. In this case of acute hepatitis, ascites developed during a period of maximum hepatitis when the volume of the liver was apparently diminished and tension on Glisson's capsule was lessened, whereas in Case 1, ascites developed during a period of subacute hepatitis during which period the liver was enlarged and the tension on Glisson's capsule was evidently much increased.

The following are extracts from the bedside notes:

October 14. Test carbohydrate meal removed one hour after eating showed free hydrochloric acid 8, total acidity 38, benzidin reaction negative, lactic acid negative.

October 15 Stool light brown no parasites or parasite eggs in the stool No fat or blood cells Urobilin present in abundance

October 17 Vomited 100 c c after a meal of toast oatmeal and milk Acid to litmus Hydrochloric acid deficit 21 Total acidity 59

October 19 Although there is no abdominal distention from gas or meteorism the hepatic area of dulness is much diminished and the liver is no longer palpable The epigastrium is retracted In the nipple line there is hepatic dulness only from the sixth to the eighth ribs From this point, the distance from the eighth rib to the costal border is 7 cm In following the seventh interspace from the costal margin there is no hepatic dulness encountered until the anterior axillary line is reached The liver seems to have fallen in on itself It has receded from the boundaries of the abdominal wall and is no longer palpable

Vomited coffee ground material Free hydrochloric acid 12 Total acidity 50 Benzidin +++ Bile +

October 21 Liver dulness the same Splenic dulness 4 5 cm above costal margin No hemorrhage Vomited once yesterday Patient is stuporous

November 3 Redness and swelling of left eardrum, bulging lanced serum discharged Pain subsided November 2 and 3 There was an elevation of temperature to 100 The fever promptly subsided after the paracentesis was performed

November 5 Free fluid demonstrable within abdominal cavity

November 7 Three liters of serum removed by paracentesis of the abdomen The fluid was bile stained, and slightly cloudy, specific gravity 1 009, no coagulation on standing, benzidin reaction negative, bile ++ The cells consisted of 80 per cent mononuclear and 20 per cent polynuclear There were only 126 cells per cubic millimeter

November 11 Twenty-four hour urine was collected Total nitrogen 9 072 gm , ammonia 1.242 gm , urea 6 272 gm , ammonia 13 6 per cent of total nitrogen, urea 69.1 per cent of total nitrogen

November 15 to 17 All traces of bile have disappeared from the urine nor did bile again appear in the urine

November 22 There is a large amount of fluid in the abdomen Jaundice has almost disappeared The hepatic dulness has again returned and the liver is now palpable at the costal border The spleen is also palpable at the costal margin

November 22 The patient had three violent epileptic convulsions during the day From the following day the patient began to show signs of improvement

December 8 Jaundice has returned Liver palpable 1 inch below the costal margin The spleen is at the costal margin

December 19 Jaundice is no longer perceptible The spleen is no longer palpable No return of ascites

Twenty-four hour urine on the day of discharge from hospital, December 19 amount 2,310 c c , ammonia 0 957 gm ammonia 5 04 per cent of total nitrogen

With the exception of two days when the patient had an otitis media there was no fever There was never the slightest evidence of any renal disease or cardiovascular impairment The clinical picture was clearly that of an acute degenerative process in the liver Although the large amount of ammonia eliminated in the urine at the time of the convulsions indicates an acidosis, there was no hyperpnea The character of the ascitic fluid was decidedly that of a transudate

COMMENT

It may justly be said that there is insufficient direct evidence of an elevation of portal pressure in the second case, but it was this experience which suggested one or two possible sources for the ascites, namely, either an elevation in portal pressure on account of an acute hepatitis, or merely a hydrops peritonei which happened to be the only collection of extravascular serum because of some modification of chemistry of the blood

In the first case we were dealing with an old interstitial hepatitis which renders the liver inelastic An acute toxic hepatitis causing an increase in the parenchymatous volume under such conditions would create a higher pressure within the enclosure of Glisson's capsule than would the same degree of parenchymatous enlargement when it occurs within the enclosure of a normal Glisson's capsule with normal and less resistant interstitial tissue

The behavior of the audible hum and palpable thrill in the caput medusae in the first case is clear and direct evidence of elevation of portal pressure due to parenchymatous hepatitis in the presence of an old interstitial hepatitis

In the second case, the evidence of the elevation of portal pressure due to parenchymatous hepatitis in a liver otherwise normal is inferential, but there are many experiences reported in perfusion of the liver which strongly suggest the possibility of some chemical source for this increase in resistance to portal blood flow

The first case may be explained on the purely physical basis of parenchymatous enlargement within an unyielding capsule and interstitial framework of the liver, but the second case demands another explanation

Whatever the cause may be in the second case, the two experiences show how important it is to consider the part parenchymatous disease of the liver may play in the diagnosis and treatment of ascites from hepatic origin

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PROTEOSE INTOXICATION

INTESTINAL OBSTRUCTION, PERITONITIS AND ACUTE PANCREATITIS *

G H WHIPPLE, M D
SAN FRANCISCO

This communication deals with the etiology of the intoxication which develops in intestinal obstruction, general peritonitis and acute hemorrhagic pancreatitis It has been demonstrated[1] that the intoxication of intestinal obstruction is due to a primary proteose which may be precipitated by five volumes of 95 per cent alcohol or by half saturation with ammonium sulphate It is comparatively easy to isolate the poison from closed loops of the intestine This proteose is very toxic and 100 mg may suffice to poison fatally a 15 pound dog

Peritonitis and pancreatitis have some clinical features in common with acute intestinal obstruction At times there may be some difficulties in differential diagnosis We propose to show that the intoxication in these three conditions is due in large part to toxic proteoses There may well be other substances concerned, but I believe that the proteose is the most important factor in the toxic reaction following peritonitis and pancreatitis

It may be objected that when a toxic proteose is isolated from a closed loop of intestine this substance is not actually concerned in the intoxication For example, it cannot be demonstrated in the blood But when a toxic proteose is isolated from the exudate of a general peritonitis, no valid reason can be

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* Read before the Association of American Physicians Washington D C May 9 1916

* From the George Williams Hooper Foundation for Medical Research University of California Medical School

[1] Whipple Rodenbaugh and Kilgore Jour Exper Med 1916 xxiii 123

given why this substance is not concerned in the associated *intoxication* Absorption from the peritoneal cavity is known to be very rapid, and any soluble substance like a proteose will be absorbed into the blood stream with alacrity We can show that a peritoneal exudate contains a toxic proteose which is precipitable by five volumes of 95 per cent alcohol and closely resembles the proteose isolated from closed intestinal loops It gives the same *biologic* reaction when injected into animals

Further, it can be shown conclusively that this proteose is not due to bacterial activity, as a toxic proteose can be demonstrated in a sterile peritonitis caused by turpentine, aleuronat or bile It seems safe to assume, therefore, that the proteose must be derived from the *proteins of the host* In a general peritonitis due to bacteria the same proteose can be isolated, and it is logical to suppose that here too the proteose may be derived from the tissues or tissue proteins of the host

A sterile hemorrhagic pancreatitis may be produced by the injection of bile into the pancreatic duct The clinical picture of intoxication under these *conditions* is familiar and is very like that of acute intestinal *obstruction* During the first twenty-four hours after the operation the animal may be killed, the pancreas rapidly ground up in water, the mixture centrifugalized and the supernatant fluid poured into five volumes of 95 per cent alcohol This precipitate contains *much albumin which can be removed* by heat in a faintly acid solution The slightly opalescent filtrate can be concentrated and tested in animals to show the presence of a toxic proteose The amount of proteose here is not great as compared with the amount in an intestinal obstruction, but this difference may be due to the great difference in rapidity of absorption It *is possible* that the proteose is absorbed from the pancreas almost as rapidly as it is formed Jobling[2] has brought indirect *evidence to show* that there is a proteose intoxication in acute pancreatitis

Considerable data[3] has been published recently to show the rise *in noncoagulable nitrogen* of the blood in many conditions of intoxication, especially in acute *intestinal obstruction* The noncoagulable nitrogen may rise from a level of 25 mg per hundred c c of blood to 100 or even 200 mg There is no lack of eliminative power in the kidneys to account for this Acute proteose intoxications due to the injection of a pure proteose into a normal dog may show a rise in noncoagulable nitrogen from 25 *mg* per hundred c c of blood to 40 or 60 mg *within three* or four hours A similar rise in blood noncoagulable nitrogen may be found in association with general peritonitis, *whether* sterile or septic, and acute hemorrhagic pancreatitis

Experiments have been carried out to explain the rise *in noncoagulable blood-nitrogen in these conditions* — intestinal obstruction (including closed loops of intestine), general peritonitis and acute hemorrhagic pancreatitis — and also in pleurisy and abscess *formation* (Cooke, Stearns and Whipple, unpublished) Dogs kept in metabolism cages during starvation after four or five days show a constant *urinary nitrogen* elimination per twenty-four hours If a small dose of pure proteose is given intravenously there will be a great increase in the urinary nitrogen elimination — perhaps much over 100 per cent increase per day, and the increase lasts over three to five days The greatest increase appears usually on the second day after injection and not during the first twenty-four hours as would be expected *This nitrogen must be* derived from the tissues of the animal, and it is to be *emphasized that* the catabolism and increased elimination lasts for days The rapid rise in blood noncoagulable nitrogen may last only a few hours following the injection and is usually best seen in fatal cases in which the tissue destruction is extreme But all the evidence points to catabolism of the hosts' tissues due to the proteose intoxication as explaining the high nonprotein nitrogen of the blood

In like manner, a dog on starvation with a uniform urinary *nitrogen* excretion will show a great rise in nitrogen elimination if a closed loop of intestine is produced The rise *may* be much over 100 per cent elimination in twenty-four hours, and may last many days A certain type of simple duodenal obstruction can be produced with which there will be little or no vomiting and no dehydration In such cases animals may show over 200 per cent increase *in urinary nitrogen* elimination per twenty-four hours, and death in six or eight days may show a blood noncoagulable nitrogen well over 100 mg per hundred c c of blood

Similar experiments may be performed on dogs with uniform nitrogen excretion when a pancreatitis, peritonitis, pleurisy or sterile abscess has been produced The same *prompt rise in nitrogen elimination* will follow the inflammation It is not to be considered for a moment that this reaction means simply a disintegration of tissue at the *site* of inflammation and an elimination of the nitrogen from this tissue only We are dealing with an increase of 2 or 3 gm of nitrogen per twenty-four hours which can scarcely be accounted for by injury of the local tissue We assume that the injury of the local tissue gives rise to toxic proteoses which are absorbed into the blood and injure the entire organism, causing among other things a considerable destruction of tissue protein in all parts of the body and the resultant increase in blood noncoagulable nitrogen followed by a great rise in urinary nitrogen

These toxic proteoses isolated *from the* intestine, from the peritoneum and from the pancreas have certain biologic reactions in common, but give no specific reactions by which we can differentiate them They give no anaphylactic reactions in guinea-pigs, no precipitins, no complement fixation It has been shown[4] that the blood of dogs injected repeatedly with proteose cannot destroy the toxic proteose, whereas the tissues of such animals can rapidly destroy such proteoses, *in vitro*

The proteose concerned in the intoxication *of intestinal* obstruction is resistant to digestion by intestinal mucosa, and pancreatitic and tissue ferments We have not yet determined whether the toxic proteoses concerned in hemorrhagic pancreatitis and general peritonitis possess the same resistance to digestive enzymes

Any animal injected with one proteose becomes resistant not only to this proteose but also to other proteoses For example, proteose from human material when *injected* into a dog will give tolerance to any of the proteoses obtained from the intestine or peritoneum of the dog or cat This holds for all proteoses tested by us

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[2] Petersen, Jobling and Eggstein Jour Exper Med, 1916, xxiii, 491

[3] Cooke, Rodenbaugh and Whipple Jour Exper, Med, 1916, xxiii, No 6

[4] Whipple, Stone and Bernheim Jour Exper Med, 1914, xix, 144

It is important to note that dogs with long continued obstruction or closed intestinal loops will survive lethal doses of pure proteose with but few clinical symptoms of intoxication Dogs recovering from a sterile pleurisy or peritonitis also show a definite resistance or tolerance to subsequent proteose injections All this evidence strengthens the argument that a proteose intoxication is present in these various conditions

Other conditions in which inflammation and pus formation or tissue destruction are conspicuous may be considered in which it is possible that toxic proteoses may be concerned We have made experiments with sterile pleurisy, considered as identical with pertitonitis, and with sterile abscess formation, but do not care to report our findings at this time Infarcts, pneumonia and many other conditions are interesting possibilities which are being studied

I feel confident that sufficient evidence has accumulated to show that there is a definite proteose intoxication in intestinal obstruction and allied conditions, in general peritonitis, either septic or sterile, and in acute nemorrhagic pancreatitis I believe that the proteose intoxication is the most important factor in the general intoxication noted in these conditions The detailed experiments will be published in the near future

THE USES OF THE DESICCATION METHOD IN OPHTHALMOLOGY

WITH SPECIAL REFERENCE TO EPITHELIOMAS OF LIDS, CANTHI AND CONJUNCTIVA

REPORT OF CASES *

WILLIAM L CLARK, M D
PHILADELPHIA

The success obtained in some ophthalmologic lesions by the desiccation method is my reason for relating as clearly and briefly as possible what has been achieved up to the present time

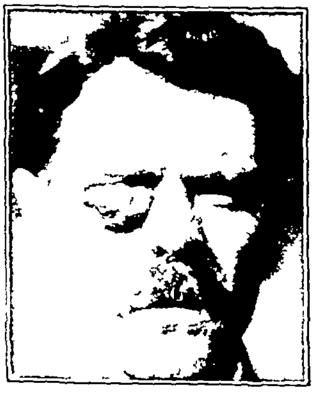
Fig 1—Round cell sarcoma of lower lid condition before excision

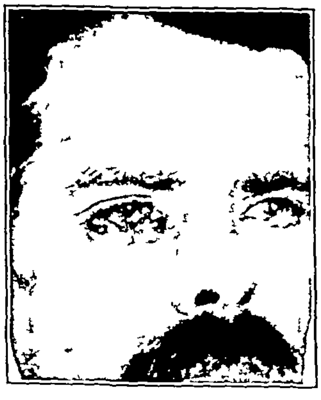
Fig 2—Recurrence two weeks after excision treated by desiccation at this stage

Details concerning this method have already been published[1] In the present paper only those points will be emphasized that seem essential for a proper understanding of the application to ophthalmology

The desiccation method is one by means of which certain congenital or new growths may be reduced by employing heat of just sufficient intensity to desiccate, but not to carbonize them This heat is best generated by means of a high frequency electric current, which is subject to accurate regulation I have been unable to produce a current possessing the proper qualities for eye work from any apparatus except a high speed static machine equipped with suitable accessories for transforming the static into a high frequency current

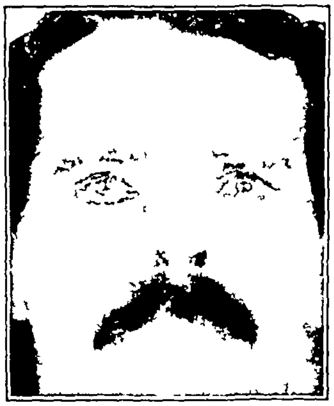
Fig 3—Condition one month after one desiccation treatment

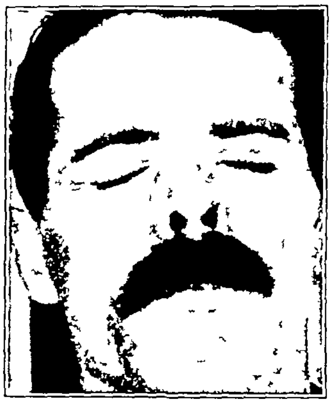
Fig 4—Same as Figure 3 with eye closed *Slight recurrence at inner canthus nine months after responded to another treatment*

The current thus produced has been found to be smoother and subject to more refined regulation than that generated from an induction coil or transformer This difference in quality of the static and the coil current differentiates desiccation from destructive fulguration

The technic for eye applications is as follows The patient reclines on an operating table which is grounded, if made of metal, otherwise grounding is not necessary The area desired to be treated is anesthetized locally by the means that seems best for the case under treatment For the conjunctiva, a 4 per cent solution of cocain, and for the lids the infiltration of a 1 per cent solution of novocain and epinephrin are satisfactory The current is tested so that the desired thermic intensity may be produced An extremely fine steel needle set in a suitable insulated holder is the best applicator for ophthalmologic growths It is an advantage to have an assistant make and break the current at given signals, so that the operator may give his whole attention to the work in hand The needle is not usually thrust into the tissue, but just allowed to brush it The depth of desiccation depends on the time of contact and the driving power of the current These can be regulated An eye speculum or chalazion clamp may be used to expose the lesion better, as may a fixation forceps to keep the eyeball or lids steady No arbitrary rules can be given for this application, for different cases demand variation in treatment, and a successful technic must be developed by practice

The desiccation method is peculiarly adaptable to ophthalmologic growths, because of the ease of application and great refinement of control It is possible to desiccate a minute growth or pigmentation even on the cornea without danger of penetrating to an undesirable depth Likewise part or whole of one or both eyelids may be removed with precision Furthermore, cartilage, periosteum or bone in proximity to or comprising the orbit may likewise be devitalized by desiccation, provided these structures are directly accessible

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Clark W L The Desiccation Treatment of Congenital and New Growths of the Skin and Mucous Membranes The Journal A M A Sept 12 1914 p 925

After a growth has been converted into a dry mass by the treatment, it is usually curetted away or excised immediately after desiccation, but sometimes it is better to allow it to slough Conjunctival growths become macerated by the lacrimal secretion and slough quickly There should be no bleeding A good cosmetic result follows the desiccation treatment, because no sutures are necessary and the cicatrix does not show a tendency to contract as after cautery, electrolysis or, indeed, excision Infection has never been observed after this treatment, and blood and lymph channels are sealed A fact worthy of special note is that in case of epitheliomas of the lids, it is not always necessary to desiccate quite all the malignant tissue, as the heat penetration is sufficient to cause a retrogression and final disappearance of the remaining cancer cells, while the normal tissue recovers On account of this property possessed by the desiccation method, it is often possible to add to the cosmetic result, and to prevent exposure of the eyeball, with its incident dangers

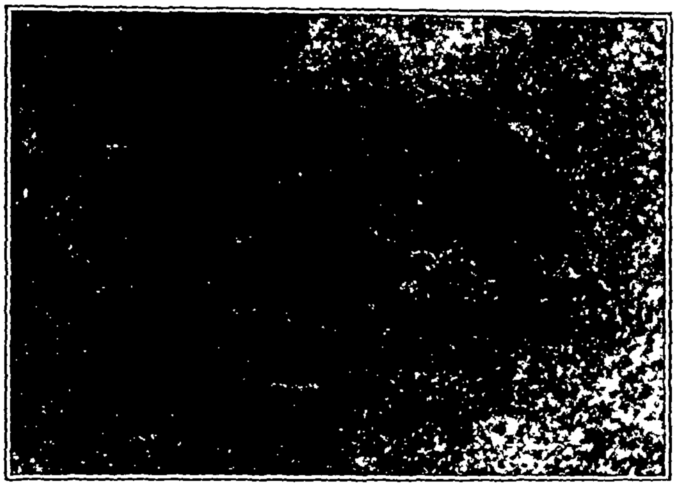
Fig 5 —Photomicrograph from growth shown in Figure 1

My experience with the desiccation method in ophthalmologic growths covers a period of seven years, and comprises the lesions mentioned in the accompanying tabulation

LESIONS TREATED BY AUTHOR

Lesions	Number
Epitheliomas of the lids, canthi conjunctiva and adjacent cutaneous surfaces (localized)	84
Epitheliomas of the lids, canthi and conjunctiva, and involving sinuses or orbit (very advanced)	8
Round cell sarcomas of lids (localized)	2
Melanosarcomas of palpebral and bulbar conjunctiva, and cornea	4
Angiomas of lids	11
Pigmented and other moles, and warts of lids	46
Xanthoma palpebrarum	17
Lupus erythematosus of lids	3
Pterygium	3
Granular conjunctivitis	5
Corneal ulcers	3
Total number of lesions treated	186

Epitheliomas of the lids, canthi, conjunctiva and adjacent cutaneous surfaces, as the brow, nose and cheek, are in a large percentage of cases of the basal cell type, and therefore of low grade malignancy and slow of progression, and they seldom metastasize This is not the case with epitheliomas of the prickle or cuboid cell types which are frequently found in mucous membranes such as the lips, tongue and buccal surfaces as well as in the skin of the extremities, etc These usually progress rapidly and metastasize early In the case of basal cell epitheliomas, local attack if thorough should result in permanent relief in practically all cases, while with the prickle or cuboid cell epitheliomas wide ablation and dissection of all adjacent glands is imperative, and even when this is done the results are, as all know, far from satisfactory Knowing, then, that the great majority of ophthalmologic epitheliomas are of low grade malignancy, it seems a duty to choose, from the various methods of treatment, one that insures a good cosmetic result as well as at least an equal chance of cure

It has been found that the desiccation method possesses these combined advantages It is quite true that even the basal cell type may progress to a fatal termination, but this, I believe, is due to long neglect or improper treatment

I have hitherto refrained from comparing the respective merits of methods employed by various advocates for the treatment of these lesions, but the time has come when I feel justified in doing so

ADVANTAGES OF THE DESICCATION METHOD

The desiccation method has the following advantages over operative surgery in localized basal cell epitheliomas in ophthalmologic regions

1 Eradication is at least as thorough, and no sutures are necessary It is a well known fact that sutures often favor recurrences

2 There is less chance of recurrence because blood and lymph channels are sealed

3 In case of recurrence, which sometimes happens, the lesion may be treated again without materially lessening the chances of ultimate cure or cosmetic result

4 There are better cosmetic results, because of the absence of contracted cicatrix

Advantages over radium and the Roentgen rays are

1 One treatment is usually all that is necessary

2 There is a better standardization of dosage

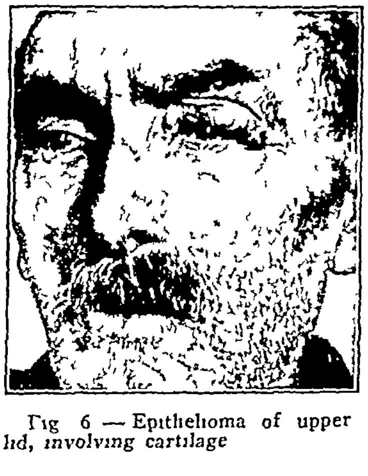
Fig 6 — Epithelioma of upper lid, involving cartilage

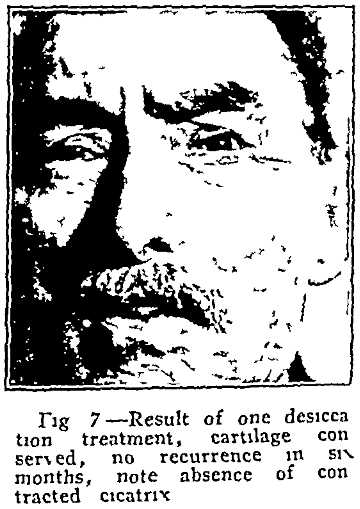
Fig 7 —Result of one desiccation treatment, cartilage conserved, no recurrence in six months, note absence of contracted cicatrix

3 Action is confined to the area under treatment, and hence there is less danger of impairing the vision or the vitality of adjacent tissues

4 The effect of desiccation is constant, while that of radium and the Roentgen rays is variable in different cases It has been observed in every case where the Roentgen rays were used previously without success, that the results have not been as prompt as when desiccation alone had been employed This seems to be due to impairment of vitality of tissues by the continued use of the Roentgen rays

Advantages over the cautery, carbon dioxid snow, liquid air, arsenic or zinc chlorid plasters or other escharotics are

1 There is devitalization of growth with one application and immediate removal of the growth

2 There is greater precision of application and certainty of thoroughness

3 There is less danger of stimulating growths by inadequate destruction

4 There is conservation of normal surrounding tissue

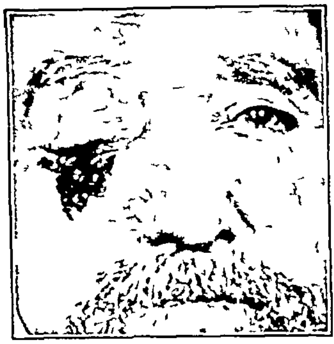

Fig 8 — Epithelioma of lower lid inner and outer canthus and malar region

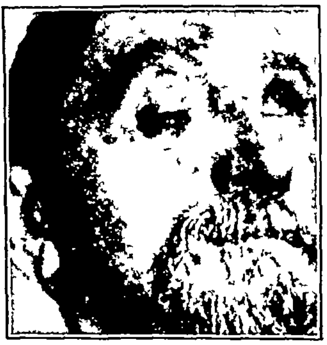

Fig 9 —Result of three desiccation treatments no recurrence in fifteen months

5 There is less inflammatory reaction and discomfort to the patient

6 There is less danger of symblepharon as a secondary complication

Advantages over electrolysis or zinc mercury ionization are

1 Desiccation destroys, from without inward, with an even distribution of destructive action

2 It is more rapid in action and less painful

3 There is no danger of dizziness or syncope

4 Healing is more rapid

It is not to be understood that the foregoing methods are always to be condemned, for in competent hands excellent results have been obtained by them all, but experience has taught me that desiccation possesses greater advantages, compared point for point, than any of these methods for the treatment of the lesions under discussion

RESULTS IN LOCALIZED EPITHELIOMAS

Of the eighty-four cases of localized epitheliomas, the average age of the patients was 52 years The youngest was 28 years Biopsies were made in twenty-one cases, and these all proved to be of the basal cell type In the remaining sixty-three cases, the clinical diagnosis was clear, hence a pathologic examination did not seem necessary or prudent, because a patient is more or less jeopardized from a curative and cosmetic standpoint by incising the growth and would to a certain measure defeat the object of desiccation A biopsy, therefore, was performed only in such cases as seemed doubtful

Of the cases treated, one has not recurred in six years, two in five years, two in four years, five in three years, seventeen in two years, and twenty-seven in one year Fifteen have not recurred in periods ranging from three to eleven months Those under one year will not be considered in computing percentage There were six recurrences within one year and four within two years Of these ten cases that did recur, six patients have remained well one year or more after a second treatment Two cases recurred a second time within a year, but the patients have remained well for a year or more after a third treatment Two recurred a third time within one year, one of these patients is apparently well after six months, and the other is under treatment at the present time Two of the remaining five patients died within a year, and at time of death there was no recurrence The remaining three I have not up to the present time been able to follow Deducting the fifteen cases in which less than a year has elapsed since treatment, the two patients who died and the three cases unaccounted for, a percentage will be computed from sixty-four cases Fifty-four have not recurred in from one to six years, which is 84 375 per cent of cases in which there has been freedom from recurrence one year or over after one treatment If the ultimate results of the cases that recurred and received a second or third treatment are taken into consideration, the percentage of apparent cures, using freedom from recurrences one year or over as a basis, will be raised to 96 875 per cent It is possible that the three cases unaccounted for would raise the percentage even higher With knowledge learned from mistakes and more thoroughness of technic gained from experience, and also with the success obtained with basal cell epitheliomas in other parts of the body, which is not recorded in this paper, I believe that practically all patients with basal cell epitheliomas can be permanently cured, or if in a small percentage there is a recurrence, they may be treated with at least an equal chance of cure as before the first treatment

Eight cases of very advanced epitheliomas involving sinuses or orbit were treated by desiccation for palliative effect only Six of these cases were recurrences after operative surgery, and continued radium or Roentgen-ray treatment The other two had been treated by Roentgen rays only At the time these patients applied for treatment, they were absolutely inoperable Much was done to relieve pain and stay the progress of the disease No cures were accomplished or expected in these cases

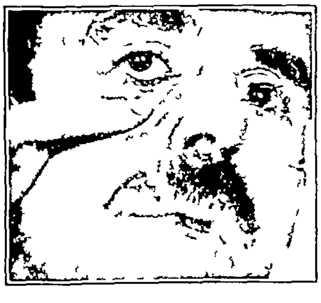

Fig 10 — Epithelioma of lower lid and inner canthus involving cartilage

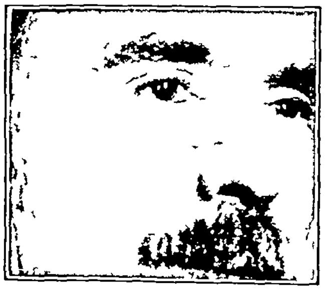

Fig 11 — Condition after one desiccation treatment no recurrence in eight months note absence of contracted cicatrix

Two cases of advanced round cell sarcoma of the lids were treated, one on the upper right lid of a girl baby aged 8 months, that had recurred two weeks after excision There was a diversity of opinion in this case as to the diagnosis One pathologist reported it as a round cell sarcoma, while the other was doubtful At any rate, there has been no recurrence eight months after one desiccation treatment with very slight deformity

The other case was a round cell sarcoma of the lower right lid of a man aged 45 years The diagnosis was confirmed by pathologic examination This was also a recurrence two weeks after operation One desiccation treatment cleared it up with practically no evidence of deformity other than absence of cilia Nine months after treatment a growth the size of a pea reappeared at the inner canthus This was treated by desiccation three months ago, and it is too early to report the ultimate result

Four cases of melanosarcoma were treated Two of these involved the palpebral and bulbar conjunctiva, and consisted of several slightly elevated pigmented growths showing a tendency to merge In one, operation had been performed with recurrence In one case there was no recurrence in ten months, but in the other there is a slight reappearance of pigmentation in one small area, and will be treated again The other two cases were very much alike and consisted of elevated pigmented growths about three-eighths inch in diameter, involving the bulbar conjunctiva and cornea The diagnosis was confirmed by pathologic examination These cases were treated in the same week There has been *no recurrence in* either case in four months

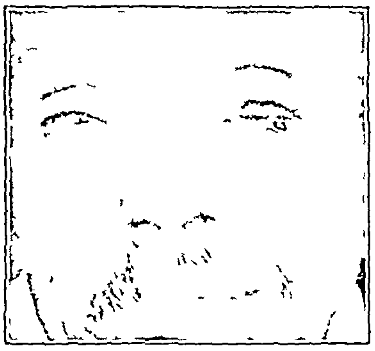

Fig 12 —Epithelioma of lower lid and outer canthus, involving cartilage

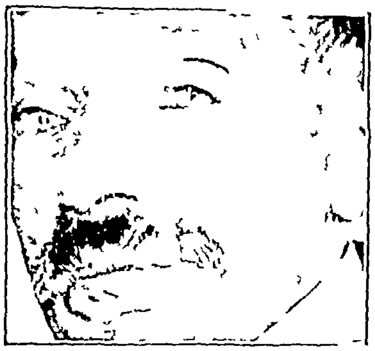

Fig 13 —Condition after one treatment, no recurrence in seven months

BENIGN LESIONS

Lesions such as warts, moles with flat or pedunculated bases and xanthoma, even though they are on the margin of the lid and involving the palpebral conjunctiva, are easily removed with one desiccation treatment without noticeable scarring There have been no failures in a total of sixty-three cases treated

Erectile cutaneous or subcutaneous angiomas also respond to one application, if the desiccation is carried deeply enough to obliterate the blood lakes, and a good cosmetic result is the rule There were two unsatisfactory results in eleven cases, the cause of which was failure to desiccate deeply enough

Three cases of lupus erythematosus of the lids responded to one desiccation treatment

Five cases of chronic granular conjunctivitis were each very much improved by one desiccation treatment An ophthalmologist who observed one result said that as much had been accomplished by this treatment as could be accomplished in three months with silver nitrate

Two cases of pterygium complicating epitheliomas of the inner canthi were successfully treated by desiccation Another case, in which there were eight recurrences after operation, was treated by this method, but sufficient time has not yet elapsed to tell whether or not there will be a recurrence Slight symblepharon resulted in this case

Three cases of indolent corneal ulcer that had resisted ordinary remedial measures responded to one desiccation treatment

CONCLUSIONS

1 Desiccation is a successful treatment for localized basal cell epitheliomas of the lids and canthi, both from a curative and a cosmetic standpoint

2 In advanced epitheliomas of these regions when sinuses or orbit are involved, complete success is not certain because of the inaccessibility of the diseased tissue, and is applied for palliative reasons, when operation fails or is contraindicated

3 The results thus far in round cell and melanosarcoma of the lids and conjunctiva have been good, but a sufficient time has not elapsed in any case to determine ultimate results

4 Success is assured in benign growths of the lids, such as angiomas, warts, moles, xanthoma and lupus erythematosus

5 Desiccation may be used to advantage for the treatment of pterygium

6 The method is valuable in the treatment of granular conjunctivitis and corneal ulcers

7 Symblepharon usually does not follow desiccation

8 There is no danger of applying the desiccation treatment to growths on the cornea, as it is under perfect control

Note —Other photographs of epithelioma cases clear enough for publication, showing freedom from recurrence for over one year, have been published before, and hence are not available at this time For this reason, only comparatively recent pictures can be shown

1809 Chestnut Street

ABSTRACT OF DISCUSSION

Dr S Lewis Ziegler, Philadelphia High frequency desiccation for the removal of accessible growths is applicable whether the new growth is malignant or benign The advantages which this procedure will present to ophthalmic surgeons are (1) the simplicity of the technic, (2) the rapid healing without scar tissue, (3) the low percentage of recurrence The disadvantages are (1) the elaborate and costly apparatus necessary to obtain the best results, and (2) the danger of too deep destruction of tissue unless the operator is skilful and thoroughly trained in this special field of work Dr Clark recently treated for me a case of angioid growth on the forehead, the result of traumatism many years ago, but which had recently begun to show malignant characteristics The result following a single treatment has been very satisfactory, and scarcely a mark is now visible The possibility of removing growths from the cornea and sclerocorneal limbus is of great interest to us This of course requires very careful technic The rugae and granulomas of chronic trachoma will often yield to this technic and thus save us more extensive operative interference I hope soon to try its efficacy in a case of keloid following a traumatic pterygium It is also possible that a method may be devised of introducing the needle into the lacrimal sac and of so regenerating its lining that excision will not be necessary I have no doubt that many other uses will suggest themselves as we continue to study the possibilities of this procedure I am especially interested in the fact that the technic

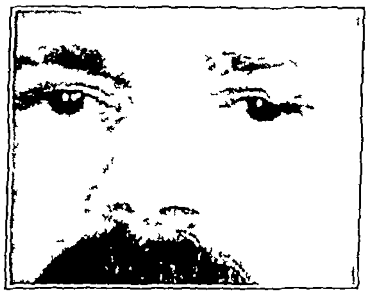

Fig 14 —Angioma of upper lid

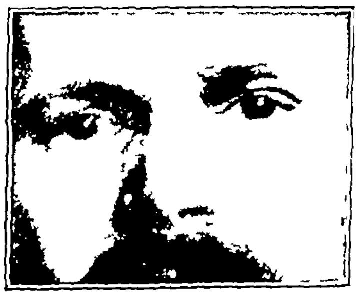

Fig 15 —Result of one treatment

of this procedure shows the advantages of the principle of high voltage and low amperage, a principle that I have long since advocated in the application of the galvanic current to the eye, and also that it tends to conserve tissue and thus yield a good cosmetic result, which requirement was the aim of my galvano-cautery operation for ectropion and entropion.

Dr. W. C. Posey, Philadelphia: I have followed a number of the cases shown and Dr. Clark has treated others for me. In a number of cases, xanthoma cleared away after one application of the method, leaving absolutely no scar. Two other cases of diffuse sarcoma of the conjunctiva were cleared away. In the first case, one in which there had been a recurrence after primary operation on the growth some ten years previously, a second recurrence five years afterward was cleared away, I think, after two sittings. The other case, an isolated sarcoma of the conjunctiva of the lower lid, yielded to one sitting. A case of diffuse injury to the cornea, in which there was a diffuse haze of the epithelium and subepithelial tissues which persisted for several weeks after the use of dionin and yellow oxid, cleared away in forty-eight hours in large measure following one application of this method. The method is of very great value in neoplasms of the lids, obviating doing extensive plastic operations and avoiding the resulting scar.

Dr. W. L. Clark, Philadelphia: One point I probably did not make clear. In treating the cornea I do not use a stream of sparks. When a stream of sparks is used through a spark gap the action is quite superficial. It should never be used in a stream on the cornea. The needle is just allowed to brush the tissue, the merest, faintest contact. If this were not done it would be impossible to concentrate it on a certain point. There is some spreading in fan shape. You must have the needle in direct contact. It is not necessary to have two poles, just one.

BISMUTH PASTE IN CHRONIC SUPPURATIVE SINUSES AND EMPYEMA

INCORRECT TECHNIC AS A CAUSE OF FAILURE IN ITS APPLICATION *

EMIL G. BECK, M.D.
Fellow of the American College of Surgeons; Surgeon to the North Chicago Hospital
CHICAGO

The prevalence of suppurative sinuses has greatly diminished during the past decade. This is due partly to our ability to prevent their formation by treating cold abscesses and joint diseases more scientifically, and partly to the employment of the newer and more effective methods of treatment of sinuses when they already exist.

The present war in Europe, however, will result in a tremendous increase in this class of cases. I am informed that Dr. Alexis Carrel, from one of the field hospitals of France, that nearly every case of gunshot wound is infected before it reaches the hospital. Dr. Carrel further reports that these gunshot and shrapnel wounds are followed by suppurative sinuses, and that there are thousands of such cases in France. No doubt, the other belligerent countries are having the same experience, so that after the war is over there will remain for years an army of invalids with these chronic suppurations.

It is principally for this reason that I am tempted again to present the subject of treating this class of cases.

Ten years have elapsed since the bismuth treatment of suppurative sinuses and abscess cavities was introduced into surgery. During these years this method of treatment has been given a most thorough and impartial trial. When first introduced, surgeons in this country and abroad readily took up the method, because it appealed to them as a rational treatment, and because my report contained such surprisingly successful results. Besides, the material at hand was plentiful, and patients were willing to submit to any form of operative or nonoperative treatment which gave the slightest prospect for a cure.

Shortly afterward there came reports from the various clinics. Some surgeons showed far better results than my own, others less favorable results, and in the hands of a few the procedure was more or less a failure. Undoubtedly these reports represent only a fraction of the cases in which the treatment was employed, for many country practitioners who used the bismuth treatment did not report their results. The accompanying table presents the statistics recorded in the literature.

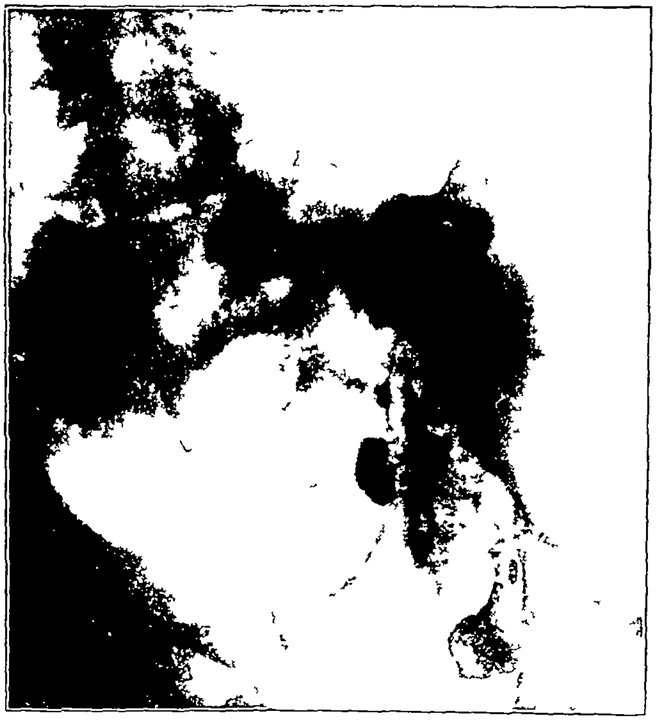

Fig. 1.—Injection of sinuses from tuberculous hip, showing narrowing of channels of preexisting abscess cavities.

This series of 527 cases (319 nose and throat cases excluded), from so wide a range of sources, gives an average of 80.64 per cent. of cures, the lowest being 12.5 per cent., and the highest, 100 per cent.

How can we explain the lack of uniformity in results? To ascertain this I have made observations in clinics here and abroad, I have conferred and corresponded with surgeons, and finally I have come to the conclusion that faulty technic is the chief cause of failures.

At the North Chicago Hospital, where the method was started in 1906, we have had exceptional opportunities for treating suppurative sinuses and abscesses with this method, the material now amounting to over 1,800 cases, which includes almost every variety of suppurative disease. No doubt, we committed many blunders before our technic was perfected, but I feel that with accumulated experience and from what I have learned through my own mistakes and those of others I am now in a position to outline for the profession a technic which will assure good results to those who will follow the rules

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* Read before the Section on Surgery, General and Abdominal, at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

I shall at this time make no reference to the statistics of my own results The members of the profession are not so much interested in what the author of a method can do, as in what they themselves are able to accomplish

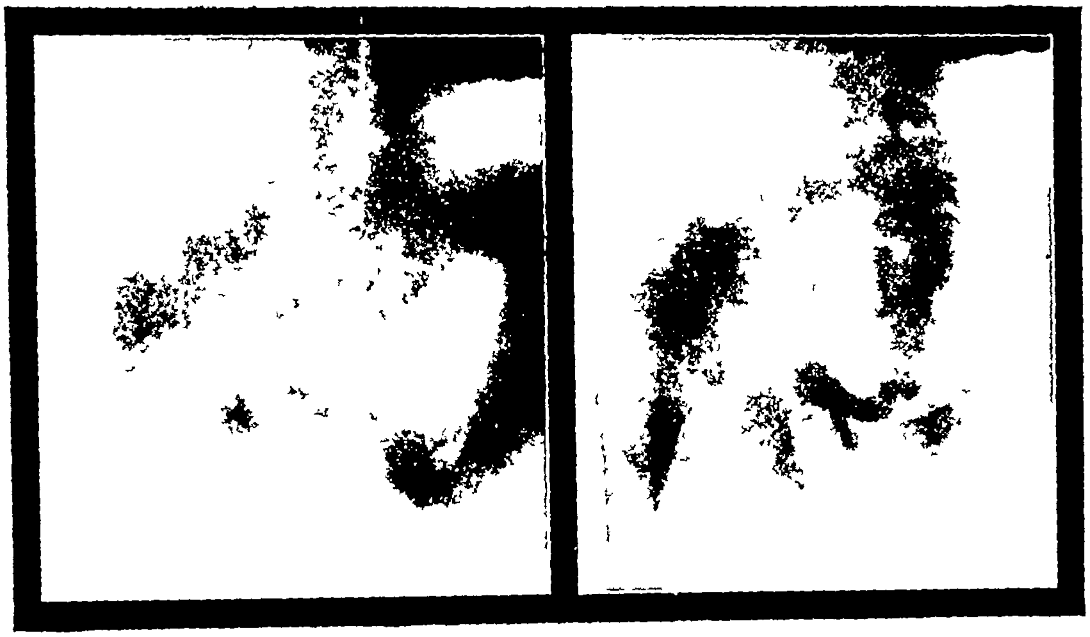

Fig 2—Rectal fistula, originating from hip joint disease, coexisting paravesical abscess

PATHOLOGY OF SINUSES

In order to carry out the treatment rationally and intelligently, one must be familiar with the pathology of suppurative sinuses and of the manner in which they originate

We must bear in mind that a sinus is nothing more than a contracted abscess cavity Its formation usually takes place in the following manner

After an abscess has formed, the increasing pressure of pus within the pus cavity will undermine the tissues in various directions, until the abscess has reached a place near the surface of the body or some hollow organ, such as the intestine or bladder, where it will break through and empty its contents The usual route is along the muscle sheaths or fascia, the abscess opening at times quite a distance from its origin In one of my cases a psoas abscess opened above the clavicle, and the resulting sinus was thought for a time to be a broken-down tuberculous gland, until the paste injected into it escaped from a second sinus near the sacrum This cleared up the diagnosis

After an abscess has emptied its contents, a shrinkage of the walls takes place so that after a time only a narrow channel, or sinus, remains Sometimes these channels undermine the tissues to such an extent that a complex network of sinuses results This fact is illustrated in Figure 1, representing a hip-joint disease in which the abscess perforated the acetabulum and undermined the pelvic fascia

When small abscesses lock themselves off, they empty their contents in different regions This explains the multiplicity of openings I have seen as many as forty openings resulting from a knee-joint tuberculosis

Sinuses frequently open into the bowel or bladder in addition to other openings on the skin, and thus fecal matter or urine may escape from the skin sinuses Recently I published the report of a series of such cases, and desire to cite two of unusual interest, one illustrating a urinary, and the other a fecal fistula, and the technic to be employed in such cases

STATISTICS FROM THE LITERATURE

Author	No of Cases	Condition	Percentage of Cures
Ochsner, Chicago	20	Tuberculous sinus	55
Ridlon and Blanchard	17	Tuberculous sinus	53
E G Beck, Chicago	192	Collective report	64
Robitschek, Minneapolis	9	Tuberculous sinus	55
Don, Edinburgh		Tuberculous sinus	17
Rosenbach, Berlin	4	Tuberculous sinus	50
Dollinger, Budapest	16	Tuberculous sinus	12½
J C Beck, Chicago	319	Nose and throat cases	22
Pennington, Chicago	17	Rectal fistulas	76
Baer, Baltimore	12	Tuberculous sinus	33⅓
Stern, Cleveland	4	Tuberculous sinus	100
Steinman, Munich	5	Tuberculous sinus	20
Bogardus, U S A	1	Tuberculous sinus	100
Vidakovich, Russia	2	Empyema	100
Nemanoff, St Petersburg	6	Empyema	100
A J Ochsner, Chicago	14	Empyema	83
E G Beck Chicago	11	Empyema	82
Ely, New York	14	Tuberculous sinus	43
Hines, Cincinnati	9	Tuberculous sinus	89
Cuthbertson, Chicago	1	Intestinal fistula	100
Sandor, Sag, Budapest	2	Otologic	100
Heitz, Boyer, Morens, Paris	11	Renal sinuses	73
Zollings, Zurich	25	Tuberculous sinus	54
Schober, Philadelphia	5	Tuberculous sinus	80
Gessner, New Orleans	4	Tuberculous sinus	50
Schmid, Vienna	15	Tuberculous sinus	30
Rivera, Porto Rico	8	Tuberculous sinus	75
E Goror, Paris	3	Tuberculous empyema	66
Reichelfelder, Washington	4	Tuberculous empyema	75
Brandes, Kiel	29	All varieties of sinuses	76
R Beck, Chicago	58	Alveolar sinuses	54
R Beck, Chicago	9	Empyema antrum	66
Collective reports from 19 dental surgeons in U S A	39	Alveolar sinuses	74
Collective reports from 19 dental surgeons in U S A	4	Empyema antrum	100

Case 1.—*Rectal and urinary fistulas resulting from hip-joint disease and spinal tuberculosis.*

I. B., woman, aged 35, had developed hip-joint disease and spinal tuberculosis at the age of 9. After a number of years of conservative treatment, abscesses formed around the hips and in the lumbar region. Several of these were incised and others opened spontaneously. At the age of 20 she had ten discharging sinuses. During the past ten years she had undergone a number of surgical operations, none of which were of avail. At the age of 28 she joined the Christian Scientists, and became a most devoted disciple of that cult, receiving their constant treatment for eight years.

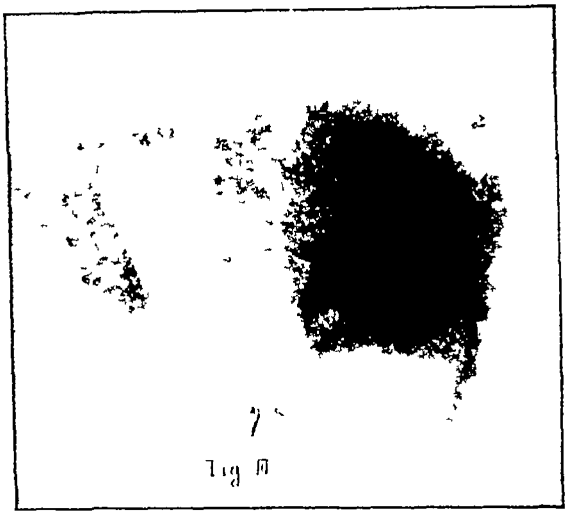

Fig. 3.—Rectal fistula originating from hip joint disease; ischium absent, destroyed by tuberculosis.

I saw her in 1909; she could not walk but could manage to get out of a very low bed to urinate about every half hour. The cystitis was the result of a perforation of a sinus into the bladder. Another sinus perforated into the rectum and another about 1 inch from the anal opening.

Here we have a coexistence of a hip and spinal tuberculosis which has produced a rectal and vesical fistula, a most distressing combination.

The bismuth treatment had the effect of closing both the fecal and the urinary fistulas, but several of the suppurative sinuses persisted. The patient was soon able to be up and walk for blocks, and resumed her worship at the nearest Christian Science church. In all sincerity she attributed her improvement to her faith in Christian Science. In order not to hurt my feelings, she declared that I myself was a Christian Scientist, but was not aware of the fact.

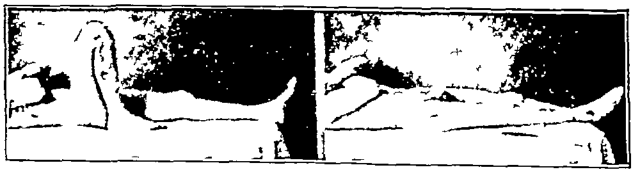

Fig. 4.—Flexion and extension in healed out hip joint disease after injection; head of femur absent. See roentgenogram (Fig. 3).

Case 2.—*Hip-joint disease causing pararectal abscess and fecal fistula, twenty years' suppuration, closing of fecal and suppurative fistulas with bismuth injections.*

C. T. H., man, aged 30, had had a right hip-joint disease since childhood. At 10 the necrosed head of the femur was removed; several sinuses leading to the hip-joint remained, which kept on discharging for the past twenty years and required dressing twice daily. His health was naturally very much deteriorated.

I saw him in January, 1913. He felt a swelling in the perineum and pain in the rectum. On account of high temperature I opened this pararectal abscess and evacuated a large amount of pus. Inserting my finger into the cavity, I felt and removed three small spicules of bone. I noted that this cavity communicated with the bowel higher up and discharged a large amount of malodorous pus mixed with fecal matter. This fecal mixture kept discharging for weeks, so that a semblance of cleanliness could not be maintained.

Bismuth injections were begun, and the closure of the fecal as well as the suppurative rectal channels was accomplished in a remarkably short time. The patient gradually improved in general health, but not all the sinuses closed. Injections were repeated at intervals of a month, and small spicules of bone extruded themselves from time to time.

At present he reports that only one sinus near the hip is open, discharging only a few drops of serous material, and that he is able to work on the farm. Figure 3 illustrates injected sinuses.

Comment.—1. Radical surgical interference in such a case is strictly contraindicated.

2. Small sequestrums are frequently the cause of continued suppuration and must be removed.

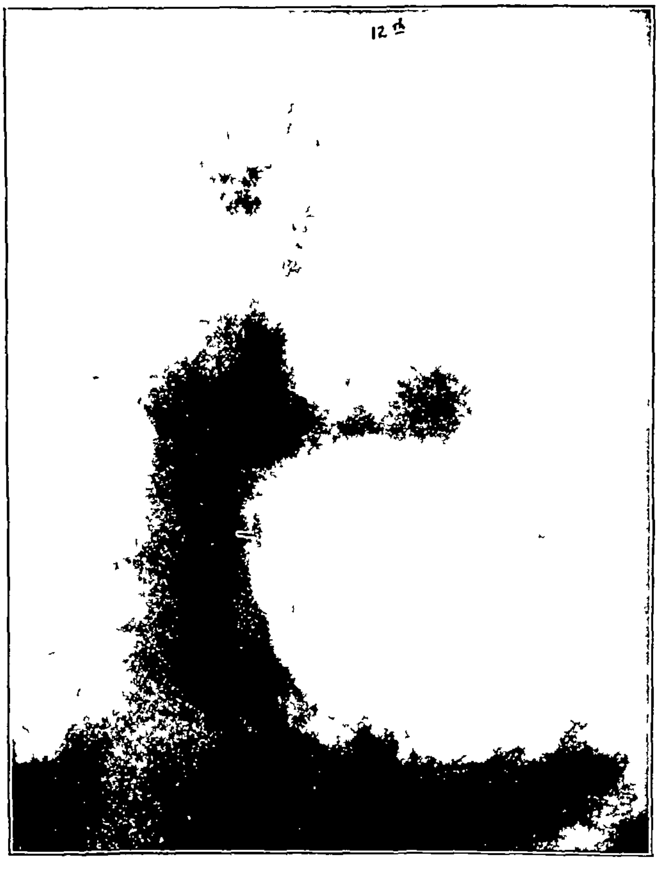

Fig. 5.—Rectal fistula proved by bismuth injection to be a tuberculosis of the eleventh dorsal vertebra.

3. Hip-joint disease may at times cause pararectal abscesses and may be mistaken for a rectal fistula.

4. A fecal fistula will often heal while the pus discharge continues. A diseased process higher up is usually present.

SINUSES MISTAKEN FOR RECTAL FISTULAS

About 20 per cent. of all cases of diagnosed rectal fistulas are not rectal fistulas at all, in the true sense of the word, but are sinuses which resulted from spinal tuberculosis, hip-joint disease or intrapelvic abscesses. This statement may surprise a good many, but I am able to confirm it by a series of over a hundred cases. The gravitating abscesses happen to open so near the rectum as to be mistaken for rectal fistulas.

In a series of 138 cases of hip-joint disease in my own practice, which I recently tabulated, I find six cases in which a rectal fistula (?) resulted from hip-joint disease, and the communication between the hip-joint and the rectal fistula is illustrated in every one of them I cite one of the cases in this connection

Case 3—*Hip-joint disease complicated with fecal and pararectal sinus and paravesical abscess, closure after bismuth injections*

C V, man, aged 26, had been well to the age of 14, when he suddenly developed a severe pain in the right knee A day later the pain shifted to the hip The trouble was diagnosed as rheumatism (?)

Abscess in the hip followed and was opened at home, a drainage tube was inserted, and a secondary infection took place Two years later the patient was operated on in Iowa City After operation the sinus remained closed for five months, but spontaneously reopened Thereafter sinuses appeared in different regions of the hip, and finally a pararectal abscess formed, which was opened and drained

He came to me in January, 1912 The right limb was about 3½ inches shorter than the left Bismuth paste was injected, and after three injections all sinuses closed Two weeks later the patient could walk around without crutches, which he had not done for years He remained well for two years, but in December, 1913, suddenly developed a severe pain in the region of the lumbar vertebra He kept on getting worse, the pain extending anterior to the bladder He had frequent urination, vesical tenesmus and great tenderness over the bladder He returned to Chicago immediately, and I found a bulging over the old pararectal scar I incised it and evacuated about a pint of reddish pus, which was mixed with fecal matter It was thus evident that communication must have existed between the rectum and this abscess

The injection of bismuth revealed a most instructive condition The paste filled out all the pararectal sinuses which originated from the old hip-joint disease, and communicated with them There is a side branch which through a narrow channel turns forward, anterior to the bladder, and fills up a cavity about 3 inches long and about an inch wide This can be observed only in the stereoscopic roentgenogram A single plate gives rise to a false interpretation (Fig 2) After two more injections the secretions became serous, fecal matter, as well as pus, stopped discharging, and the patient regained his health with unusual rapidity, and is perfectly well today

Comment—The instructive features in this case are 1 It proves that hip-joint disease can produce a fistula around the bladder and is likely to perforate into the bladder 2 A fistula which opens near the rectum may originate in the hip-joint 3 Such cases as this may be regarded as inoperable and still curable by this simple method of injection 4 There is one remarkable phase of this case In spite of entire destruction of the hip-joint, the patient has perfect motion and normal strength in his limb There is a shortening of about 3½ to 4 inches He can stand on the affected limb as long as on the sound one There is the same amount of flexion as in the healthy limb, although the entire head of the femur has been destroyed and absorbed (Fig 4)

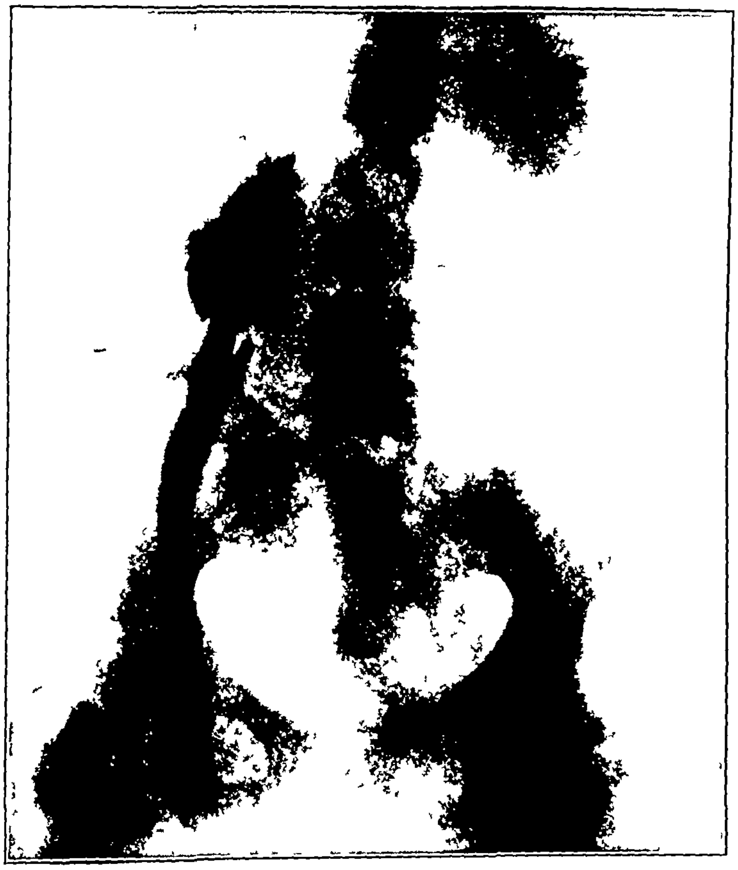

Fig 6—Supposed hip joint disease, appearing to be a paranephritic abscess, with subsequent injection, proved to be a tuberculosis of the twelfth dorsal vertebra (see Fig 7)

That a sinus resulting from a spinal tuberculosis may be mistaken for a rectal fistula is clearly illustrated by the following case

Case 4—A man, aged 53, developed what was thought to be a pararectal abscess twelve years before I saw him It was incised, and a fistula remained During the next twelve years he had three extensive operations for rectal fistula, the last resulting in incontinence of feces

I saw him in July, 1913, in London, Canada He had been on a cot for nearly two years The discharge was so profuse that he had to be dressed three or four times a day in order to preserve a semblance of cleanliness The rectum was gaping, so that one could inspect about 4 inches without a speculum

A week later he came to Chicago I injected the pararectal sinus with bismuth paste and took a roentgenogram (Fig 5) This revealed the fact that the supposed rectal fistula originated in the eleventh dorsal vertebra and caused multiple abscesses and sinuses in the abdomen, all communicating with the rectal sinus

This was evidently a case of tuberculous spondylitis, the psoas abscess opening near the rectum

The therapeutic result was very satisfactory The sinuses began to close, the patient gained rapidly in weight, and three months later he left the hospital with only one sinus in the rectum discharging a small quantity of pus

ADVANTAGES OF THE BISMUTH METHOD

Having now a clear picture in our minds as to the origin and formation of fistulas and sinuses, we appreciate why some of our operations in the past have not produced the desired results To dissect a fistulous tract of only a few inches' extent, such as we find in the ordinary cases of rectal fistula, may be feasible, but to attempt the dissection of a network of fistulas, such as are shown in these roentgenograms, is obviously impossible Most surgeons can recollect cases in which they have attempted this and had to give up in despair, after one or two hours of work

In the employment of the bismuth method, we have two advantages first, it helps to avoid useless operations, and second, it produces results without operation

The method in question has been described in my previous publications, but I shall here briefly refer to the modus operandi It consists of injecting a quantity of bismuth paste[1] (liquefied by heating in a water bath) into the opening of a sinus until one feels reasonably certain that all the ramifications have been filled The paste thus injected will rapidly thicken and remain in the sinuses long enough to permit the taking of a roentgenogram The bismuth, having the physiical properties of producing a shadow on the sensitized plate, will give a clear picture of the existing channels of sinuses. If a set of stereoroentgenograms are viewed, the sinuses appear more distinctly, and their relations to the surrounding structures can be satisfactorily estimated. Such pictures will convince even the most skeptical of the value of this diagnostic method. In former years we relied on the probe and colored fluids as pathfinders of these sinuses, but such means may be used as guides only during an operation, as one can readily understand that a probe could never reach the depth of the sinuses shown in these roentgenograms.

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[1] This paste is composed of bismuth subnitrate, 30 parts, and yellow petrolatum, 70 parts

When a sinus is very long and tortuous, the paste should be injected in a liquid state, so that it will flow readily into every part of the tract. If there is more than one opening, the paste is liable to escape from the nearest one and thus miss the remaining channels. To avoid this technical error, the mouths of all the other sinuses should be compressed by an assistant, by placing the finger tips against these openings, so that the liquid will flow in other directions, filling up all channels of the sinuses. It is essential that every crevice should be filled at one injection, otherwise there will be a recurrence of suppuration.

A striking example is given in the following case, showing how easily one could miss the focus of infection by faulty technic.

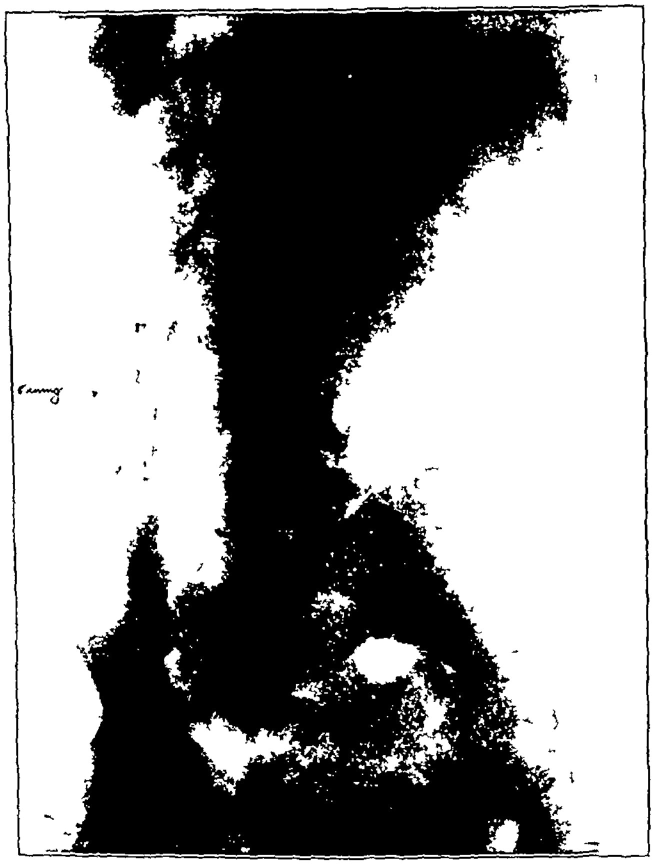

Fig. 7.—Proof of origin in twelfth dorsal vertebra by second injection.

Case 5.—*Tuberculous spondylitis first mistaken for hip-joint disease, then for a perinephritic abscess, and finally proved to be tuberculosis of the spine.*

A. C., woman, aged 25, developed two years ago pain in the lumbar region. Two months later there was a great deal of pain in the right hip and knee. Below the greater trochanter a fluctuating abscess appeared, which was opened and drained by her physician. She developed high fever, night sweats, became much emaciated and was unable to move. This condition persisted two years, when she was brought to me for treatment with a diagnosis of hip-joint disease and a discharging sinus.

The diagnosis was based on the fact that the abscess opened near the hip, that there was pain in this region and a contracture of the limb toward the median line, such as very often follows hip-joint disease.

A roentgenogram before the injection, demonstrated that the hip-joint was free from disease. An injection of bismuth paste, as shown in Figure 6, proves that the sinus extended from the opening on the outer side of the right thigh, along the adductor muscles, underneath Poupart's ligament, following the psoas muscle sheath toward the region of the kidney. In this region there was an accumulation of a large quantity of paste. A stereoscopic roentgenogram indicated that we had to deal with a perinephritic abscess, which had gravitated and opened at the external side of the right hip.

An operation was decided on to produce counterdrainage for the existing perinephritic abscess, and under local anesthesia the abscess was opened and large quantities of pus and paste escaped. The patient, however, did not improve and quantities of pus kept discharging. I became suspicious that we had *not yet struck the right place, and therefore* decided to inject the abscess cavity in the lumbar region and carefully prevent the escape of the paste through the original sinus at the hip. This was done by using a large syringe containing 2 ounces of the paste in very liquid state, and compressing the channel above Poupart's ligament by external pressure during the injection, thus forcing the paste into other directions.

To my surprise, I found that the paste passed through the twelfth dorsal vertebra into another abscess on the left side. This is shown clearly in Figure 7. The abscess on the left side in the region of the kidney was then opened and drainage produced.

Even with this additional drainage the patient kept on declining and for a time we thought she could not live, but the injections were continued at intervals of one week for the period of a year. Special care was taken to reach the focus in the twelfth vertebra.

A gradual improvement took place, and now, three years later, the patient is able to be up and about, with a slight discharge from one sinus.

COMMON TECHNICAL ERRORS

What are the technical errors usually committed by practitioners?

1. The bismuth may not be sufficiently incorporated with the petrolatum and the paste therefore contains small lumps of pure bismuth, which interfere with the injection of the narrow sinuses. A little water accidentally dropped into the mixture will produce a solution similar to that of curdled milk. The paste in such a state is unsuitable for the treatment.

2. The mixture is not heated sufficiently to become liquefied. As a result, part of the tract becomes clogged and many of the ramifications are not reached at all.

3. The instruments are often improvised and not suitable for this form of treatment.

4. Undue force is used in the injection, tearing the tissues and forcing the paste and pus into freshly produced wounds. This may cause serious complications.

5. An incomplete filling of the entire sinus tract is the most common error, which is responsible for more failures than any other cause.

6. The sinuses are injected too frequently by some practitioners.

7. Patients are at times allowed to dress their own wounds, reinfection usually following.

8. Physicians at times do not give the paste sufficient opportunity to do the work. Results are not always immediate. Patience and persistence are essential factors in the success of the bismuth paste treatment.

METHOD OF PROCEDURE

For practical purposes the procedure in the average case is here given Let us take, for example, a case of tuberculous coxitis of long standing, with multiple suppurative sinuses

1 Preliminary to the treatment, a set of stereoroentgenograms of the affected region is taken, to make sure that there are no foreign bodies or sequestrums present If they were present, they might be overlooked after the bismuth had been injected, because the shadows produced by the bismuth would obliterate the shadow of the foreign body

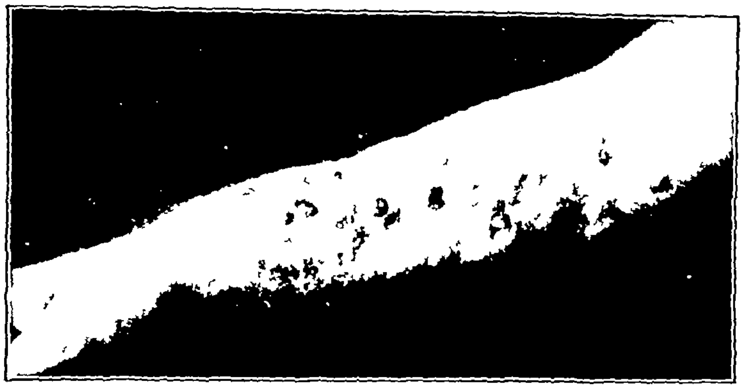

Fig 8 —Osteomyelitis of radius with twelve suppurating sinuses

2 Bacteriologic examination of the secretion is the next step Smear preparations, cultures, and, in some instances, inoculation of guinea-pigs, are made

3 The sinus is now ready for injection No attempt should be made to irrigate the sinuses with antiseptic solutions, nor should any drying out process be tried The skin surrounding one of the sinuses is washed with alcohol, and the tip of the glass syringe, which has been filled with the liquefied paste, is placed firmly against it, and the paste slowly but firmly forced into its channel until it is seen to escape from the nearest opening Then the finger is quickly placed against this opening to prevent the escape of the paste, and the injection is continued until the patient begins to complain of some pressure If there are many openings, an assistant must occlude all of them with his fingers during the injection, in order to be certain that all the branches of the sinuses have been filled

4 After the injection another set of stereoscopic roentgenograms is taken, which will give a clear picture of the entire network of sinus tracts and sometimes be the means of tracing the path to the focus from which the disease originated

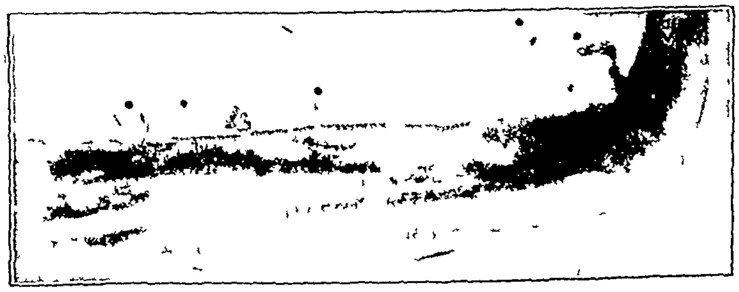

Fig 9 —Sequestrum of radius

5 A sterile bandage is then applied and the patient put to bed, for a few hours, or a few days, depending on the severity of the case In subsequent treatments the patients are usually allowed to walk about immediately after the injection

6 The first dressing is done the following day If the discharge, which before injection was creamy or profuse, has changed to a serous consistency, it is to be regarded as a favorable sign, and a microscopic examination will usually prove it to have become sterile If the discharge is sterile, the sinuses need not be injected unless they later become reinfected It is not intended that the paste remain in the sinuses It will gradually exude, and within a week only traces may be found by flouroscopic examination or by roentgenogram

7 Should the discharge persist and remain purulent, the injections should be repeated at intervals of from five to six days for a reasonable length of time (from four to six weeks), and if after this period there is no appreciable improvement, one must search for the cause A sequestrum may be present, or the focus of the suppuration be in such location as to be inaccessible to the paste, as, for instance, in the cancellous structure of long bones

In such cases, either the foreign body must be removed, or, as the case may be, the infected cancellous structure of bone curetted, and the bismuth injections resumed

For illustration of case with sequestrum, I cite the following

Case 6—*Osteomyelitis of ulna, with twelve sinuses and sequestrums*

Miss F B, aged 17, had diphtheria at the age of 8, and has had chronic tonsillitis ever since Three years ago a swelling developed in the right wrist, but gradually the entire arm was undermined with pus, and abscesses formed which were incised and drained The elbow joint became ankylosed, and the sinuses persisted in discharging

The patient came with the request to have the arm amputated above the elbow

Examination, Aug 9, 1915, revealed the right forearm and wrist and above the elbow studded with twelve suppurative sinuses, discharging foul and creamy pus (Fig 8) The elbow was entirely ankylosed, the fingers and wrist stiff and swollen There was a swelling about 3 inches in diameter on the left side beneath the scapula, fluctuating and red on the surface, and also a discharging sinus on the right ankle

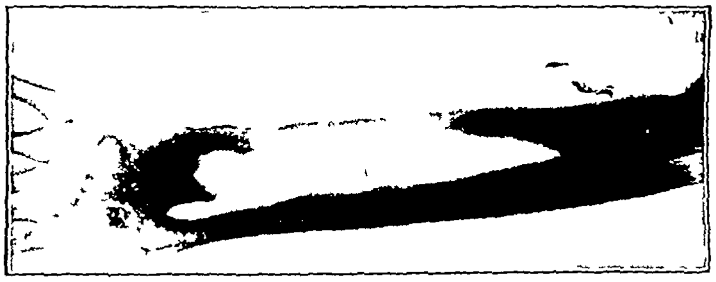

Fig 10 —Sequestrum removed, showing a strip of radius preserved for regeneration of bone

Steroscopic roentgenograms (Fig 9) showed distinctly a large sequestrum of the ulna, taking in almost the entire length of the bone

A conservative operation was decided on, instead of amputation Under general anesthesia the sequestrum was removed through a long incision, and the larger part of the diseased ulna was removed, except the external border and the articular joints at the wrist and elbow, which were left in order to preserve the contour of the arm and leave enough healthy bone for regeneration (Fig 10)

The essential point in the after-treatment was to treat the wound open Not a single stitch was put in, and the wound was packed with gauze Three days later the gauze was removed and the entire cavity filled up with bismuth paste and bandaged The incision gradually closed by contracture of the wound edges

The remaining sinuses on the flexor surface were injected, and all healed within a few weeks, so that the patient has at present a useful arm, without any suppuration (Fig 11) She has developed strength in the muscles, and can perform all housework, lifting heavy articles, such as chairs (Fig 12), but she still has an ankylosis in the elbow, which we shall try to remedy by subsequent plastic operation

The sinus on her right ankle was injected once and healed out, and the cold abscess underneath the scapula was treated with the prophylactic method, which I advocate, the abscess being incised and 5 per cent bismuth paste being injected, and it healed promptly (Patient exhibited)

PREVENTION OF BISMUTH POISONING

Great care should be taken not to retain too large a quantity of the paste in large pus pockets for too long a time, because of the possibility of gradual absorption of the bismuth, which is liable to produce toxic effects and even fatal poisoning

In 1909 I reported the first case of this form of poisoning[2] At that time I warned the profession against the indiscriminate use of the paste, and this, no doubt, put many on guard who thought that bismuth was an entirely harmless substance The occurrence of this accident has deterred many surgeons from employing the bismuth treatment, and since poisoning can be avoided, it would be deplorable that an otherwise useful method should not be employed on this account Although the bismuth treatment is now used more extensively than ever before, there has not appeared in the literature any case of bismuth poisoning for the past few years That this complication may be avoided is evident from the fact that in our series of over 1,800 cases treated at the North Chicago Hospital, we have not had a single fatal case

It is, of course, possible that there are persons who have an idiosyncrasy against bismuth and a special susceptibility to its absorption, and may develop toxic effects from bismuth in small doses, but such cases must be very exceptional, when we stop to consider that in 1,800 of my own cases, not a single patient had this idiosyncrasy Are we to discard an otherwise useful method because of the possibility of encountering such a case? Certainly not, we do not discard ether or anesthesia because there are fatalities on record from its employment

Should toxic symptoms appear, the paste must be removed by washing out the cavities with warm olive oil The sterile oil should be injected and retained from twelve to twenty-four hours, in order to produce an emulsion with the bismuth mixture This emulsion should be withdrawn by means of a catheter or suction syringe After its removal, all symptoms will promptly disappear Scraping out the paste with a scoop is a dangerous procedure, because it opens new channels for absorption

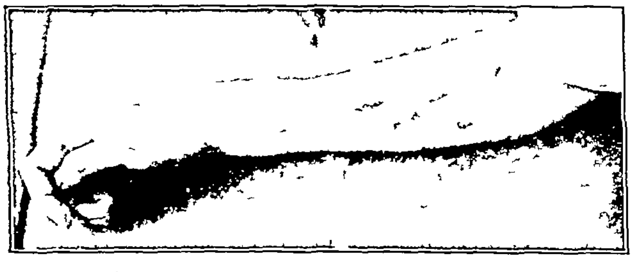

Fig 11—Final result after bismuth injections

SUMMARY

1 Failures in the application of bismuth paste are principally due to faulty technic or carelessness

2 The treatment has passed its experimental stage, and the results obtained by surgeons all over the world warrant its more general employment

3 Stereoroentgenograms should be employed to control the treatment and to prevent useless operations

4 Bismuth poisoning can be avoided, and is now a rare occurrence

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ABSTRACT OF DISCUSSION

Dr. Albert J Ochsner, Chicago In discussing cases that are suitable for treatment with bismuth paste injections we must first consider the mechanical conditions present Canals extend in a number of irregular directions, with usually enlargements at various points, and little lakes here and there The progress of the disease is by pressure, pressure necrosis or gravity pressure Surgery alone cannot discover all these canals and lakes, but the bismuth injection does, hence Dr Beck's treatment is of such great value In the first place, he produced a condition favorable for disposing of granulation tissue, second, he disposed of accumulations which increase in amount and continue the pressure necrosis unless removed Third, bismuth possesses a certain antiseptic quality, as does also the petrolatum, because it has been shown that microbes cannot live when they are mixed up with fatty substances Now regarding the application of the treatment Whenever a surgeon has told me that he has not been successful in the use of Beck's paste, I have invariably found that he has not applied the paste in the manner that Dr Beck has told us it should be applied I have seen it applied so that instead of merely filling these spaces it would tear the tissues and force the septic material into new spaces No wonder the patients had an elevation of temperature afterward and their condition became worse! From their point of view the treatment did no good It is essential, therefore, to inject the paste very slowly and continuously so that it will fill not only the nearest spaces but all spaces, taking the place of the septic material, substituting antiseptic material from which there is no absorption for septic material Scarcely a day passes that we do not use the paste in our hospital and the results are just as Dr Beck has described them

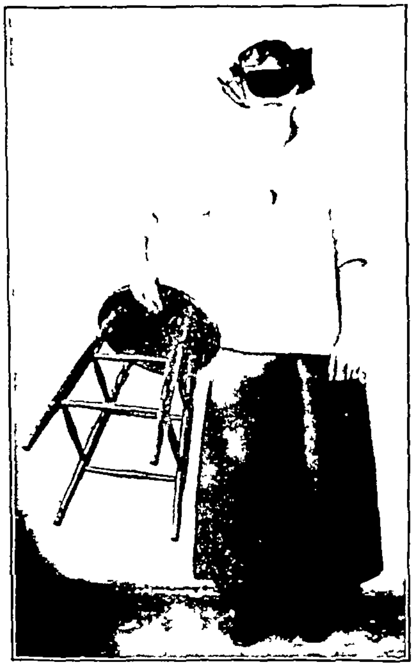

Fig 12—Illustration of strength and function of the healed forearm

Dr Emil G Beck, Chicago The formula we use now is 30 per cent subnitrate of bismuth, 70 per cent petrolatum In empyema cases I have lately used a 10 per cent mixture, with very gratifying results There is no advantage in substituting the subcarbonate for the subnitrate of bismuth in order to avoid bismuth intoxication Either preparation is liable to produce this complication if used carelessly Such complications should occur extremely rarely In my own series of 1 800 cases not a single fatal case has occurred

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Changes in the Diet—Most of us can recall the days when meat or eggs, or both, formed an indispensable part of the early meal, in the United Sates At present there are signs everywhere, at least among those classes which are not engaged in more vigorous muscular work, of a simplification of this meal by the exclusion of meat and the substitution of cereals and fruits This is an approach to the traditional breakfast of continental Europe It is not easy to analyze the underlying causes for such dietary changes, they are not solely physiological nor economic in origin—Mendel Changes in the Food Supply and Their Relation to Nutrition

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[2] Beck E G Toxic Effects from Bismuth Subnitrate The Journal A M A, Jan 2 1909 p 14

SUBLUXATION OF THE HEAD OF THE RADIUS

REPORT OF A CASE AND ANATOMIC EXPERIMENTS *

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ST LOUIS

While much has been written on subluxation of the head of the radius, the fact remains that no satisfactory explanation of what produces and maintains the deformity has been given It is hoped that the following history and the succeeding experiments will throw light on the subject

A boy, aged 5, fairly well developed, was pulled across the floor by his left hand while playing with his brother The following morning, Jan 1, 1914, he was brought to me The hand was in nearly complete pronation, and the forearm slightly flexed and held in front of him He complained of pain in the elbow, there was no swelling, no redness, no heat Attempts at supination were painful and were resisted, pronation caused no pain There was tenderness over the head of the radius Flexion of the forearm was painful Several attempts at supinating the hand suddenly resulted in a slight click, felt by the thumb palpating the radial head, and motion in all directions was at once free and painless The arm was carried in a sling for one day

The following summer, in a fit of anger, the boy hooked the fingers of his two hands together and, while pulling in this position, subluxation of the right elbow occurred Immediate careful examination showed the same characteristic pronation and slight flexion of the forearm as in the first instance No attempt at reduction was made, but the patient was sent away with instructions to return later when a roentgenologist could be seen He did not come back, for while playing the arm suddenly "became all right"

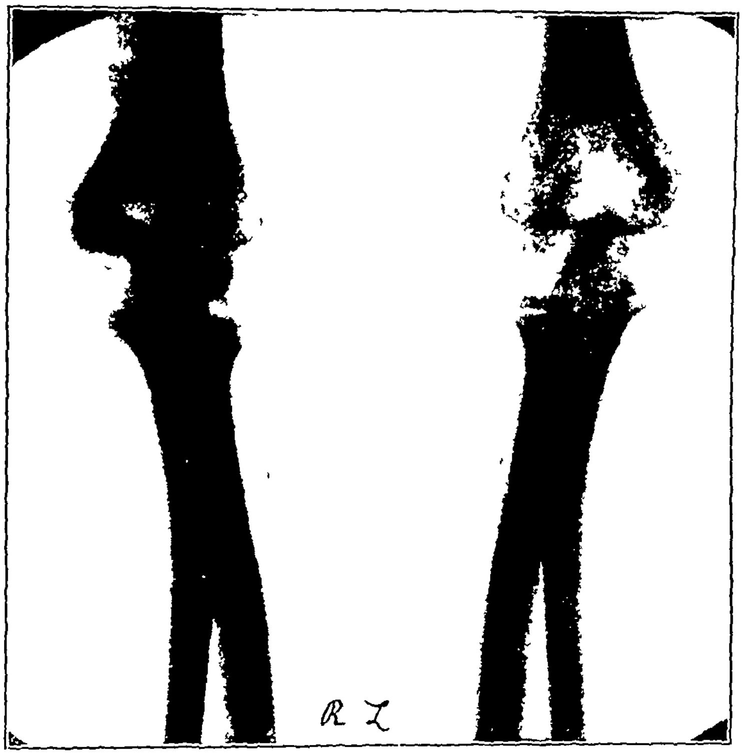

Fig 1—Lateral view of right and left elbows

The accident happened a third time in May, 1915 The patient sat on a chair with his hands clasped in front of one knee, his forearms slightly flexed, rocking back and forth on the buttocks Suddenly he had pain in his left elbow and could no longer use the arm The hand was in pronation with the forearm slightly flexed, as in the two preceding instances A roentgenogram was taken While an examination was being made, the arm was suddenly free of pain and motion was normal In the second and third instances no dressing of any kind was used The roentgenograms show the head of the left radius to be about half the thickness of the epiphysis farther from the capitellum than the right

In going over the clinical records of Washington University Dispensary and the St Louis Children's Hospital for the past five years, I have been unable to find any record of a subluxation of the radial head among over 14,000 surgical and orthopedic cases I am inclined to believe it occurs more frequently than would appear from this, for I have seen one other case myself

Most of the work on the subject was done previously to 1889, principally by the French and German writers, 400 cases having been reported Van Arsdale in that year reported 100 cases and gave a complete bibliography A great many experiments were done on children's bodies by a number of men who proved that the lesion is a slipping of the radial head out of the annular ligament They thought that the injury was due to a sudden pull on the extended forearm, the hand going into pronation as the injury took place Some authorities think forced pronation is a factor, but such men as Stimson do not believe this to be the case All observers heretofore have asserted that the lesion could not take place while the biceps was contracted, and no one has produced it on an adult body

The hand is held in nearly full pronation, but "exactly how it is held so as to allow some rotary motion no one professes to say" (Cotton) Gardner,[5] in 1837, and Rendu,[17] in 1841, thought that the tuberosity of the radius was caught behind the ulna Van Arsdale said it was due to the eccentric shape of the radial head, the epiphysis of which became pushed to one side and impinged on the ulna

In an attempt to clear up the matter, if possible, a number of experiments were made on twelve arms from material in the anatomic laboratory of the Washington University Medical School In every instance the bones were practically free of muscles, but the ligaments were intact While trying forcible traction on the first arm the annular ligament could be seen to spring inward, but on attempting powerful adduction, the external lateral ligament ruptured Of the remaining eleven elbows a subluxation of the radial head was produced in six In each of these six the annular ligament always slipped over the head when the hand was pronated One case with the hand in this position resulted in failure In the remaining four, the ligament tore during traction while the hand was supinated

All the standard textbooks on anatomy give the shape of the radial head as round Measurements of 100 specimens show the one diameter to be 1 5 mm greater, on an average, than the other In some bones the difference is as much as 3 mm The long diameter is always in the same sagittal plane as the interior portion of the tuberosity of the radius The explanation for the lesion occurring with the hand pronated is

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* Read before the Washington University Medical Society, April 24, 1916

* Because of lack of space, this article is abbreviated in The Journal The complete article appears in the reprints A copy of the latter will be sent by the author on receipt of a stamped addressed envelope

[5] Gardner London Med Gaz, 1837, xx 878

[17] Rendu Gaz med de Paris, 1841, p 301

as follows Anteriorly, from the neck of the radius to the head, the rise is an abrupt one Any traction with the hand supine pulls the ligament against this Laterally and posteriorly the ascent is quite gradual so that in pronation the ligament lies over this part and is stretched until it suddenly slips over the head

The first successful demonstration gave a typical picture forearm slightly flexed and pronated, some further pronation possible, supination resisted The specimen was left until the following afternoon The lateral ligament and the inner part of the annular ligament were stretched very tightly Grasped between them was the lesser diameter of the radial head, the greater diameter being anteroposterior My thought was that the lateral ligament and the outer part of the annular ligament were what held the bone fixed, therefore the inner part of the annular ligament was cut first The head was very slightly loosened Then on cutting the lateral ligament the head was immediately freed Internally on the edge of the radial head was an indentation caused by the taut ligament It was in line with the anterior portion of the tuberosity which, with the hand in pronation, lies behind the medial line One hundred and twenty degrees around posteriorly from this point, on what would ordinarily be the medial surface of the head, but which in this position was slightly external and in line with the posterior part of the tuberosity were two other indentations caused by the lateral and annular ligaments They were 1 mm deep and 3 mm apart, extending completely across the circumferential articulation, slanting from above downward and backward, at an angle of 45 degrees with the long axis of the bone

To make certain that the inner part of the annular ligament was not holding the head, the lateral ligament was cut first in one case In the other four cases, the inner part of the annular ligament was cut first One case, left for fifteen minutes after the radial head had been pulled out of the annular ligament, had a single indentation laterally at the point where the specimen which had been left twenty-four hours had two The one indentation was, of course, more shallow than the two

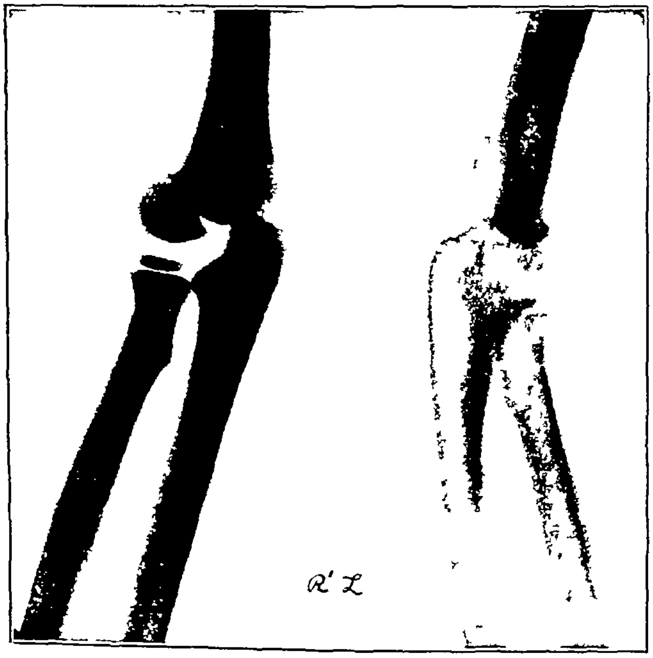

Fig 2—Anteroposterior view of right and left elbows It will be seen that the distance from the head of the radius to the capitellum is greater in L and L than in R and R

The tuberosity of the radius had nothing to do with the deformity, for a knife blade was easily inserted between the two bones at that point

To make sure that the wrist or interosseous membrane had nothing to do with the deformity, in the last five successful subluxations, the lower end of the radius and the shaft were freed from the ulna Moreover, to be certain that I had produced the lesion described by other writers, and being convinced of the cause of the pronated position, one radial head was subluxed, and then replaced by supination three or four times before the ligaments were finally cut to complete the experiment

In order to lessen the chance of error, measurements were made with calipers

I have found no mention in the literature of a case in which the injury was produced in other than the classical manner, except one in supination which was reported by Duges [18] In the case which is the basis of this paper one radius was subluxed while the forearm was flexed about 30 degrees, and the other while the forearm was flexed 120 degrees or more Furthermore with the forearms in such a position and the child himself pulling, the biceps must have been contracted It would hardly seem possible that adduction could have been a factor

CONCLUSIONS

Subluxation of the head of the radius can occur while the biceps is contracted, with the forearm flexed and without adduction It occurs only while the hand is pronated The line of traction is parallel to the shaft of the bone Supination is resisted because the tense lateral ligament forces the flattened side of the radial head against the anterior edge of the lesser sigmoid articulation and the inner attachment of the annular ligament Attempts at this motion throw the exposed two thirds of the long axis of the head against an already tight ligament, making it more tense Complete pronation is possible because the short part of the long axis is behind and moves outward against the loose posterior portion of the lateral ligament [19]

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[18] Duges Jour hebd de med Paris 1831 ix 196

[19] In addition to the references already given the following will be found of interest
Clumpsky Ztschr f orthop Chir 1911 p 213
Bessel Hagen Arch f klin Chir 1891 xli 420
Sawicki Gaz lek Warszawa 1891 Series 2, xi, 702
Caldwell Lancet Clinic 1891 N S xxviii 496
Broca Gaz d hop 1903 No 56
Lobit Med inf Par 1898 ii 95

Ante-Natal Hygiene—So far as the race is concerned the health of the mother, especially at the time she is carrying a baby, is of great importance, and for this reason ante-natal hygiene must be carefully considered Ante-natal life occupies a period of nine months, except in the case of prematurely born infants During this time the infant is growing rapidly The mother supplies the necessaries of life during these nine months, and the infant is being prepared for an existence of many years On looking at the infant mortality rate for the last few years, we find that it varies a good deal each year according to the age of the infant, and that it is higher during the first month of life than at any other time It is also seen that infant mortality has decreased more rapidly of recent years during the ages over 1 month than during the first month of life The greatest improvement has been in the second half of infancy, though there has been a remarkable saving even in the first half—Ashby

SEVEN UNERUPTED TEETH IN THE SUPERIOR MAXILLA

E P R RYAN, DDS

NEW YORK

That foci of infection in systemic and general septic conditions are found in the mouth, in abscessed teeth and infected gum tissue, has been widely accepted by the profession Actual pus-forming conditions of these organs, however, does not exclude them as a cause of systemic disorders Pressure from teeth, dislodged from their normal tract, and the deposition of supernumerary teeth, are, in many baffling conditions, the unseen causes of chronic neuralgia, rhinitis, neuritis, nasal conditions and hysteria I do not presume to offer this as a frequent or common cause in these conditions, but only to present it for consideration when other correct diagnosis cannot be reached

Supernumerary teeth are much more common than we have hitherto believed, because we had no means of knowing their existence without the use of the roentgenograph The daily use of the Roentgen ray in my practice has proved the truth of this statement by revealing many impacted and unerupted teeth which were direct causes of nerve pressure We must realize that there are few normal mouths, that is, mouths in which all the teeth have erupted in proper occlusion, and that the tooth germ cells will deposit in any part of the body to which they may become deflected A striking feature of the cases recorded in which teeth have been found in the nasal cavity is that only one or two teeth have been found, and in several cases the discovery of the tooth has been made when the patient has shown a tuberculous or syphilitic history

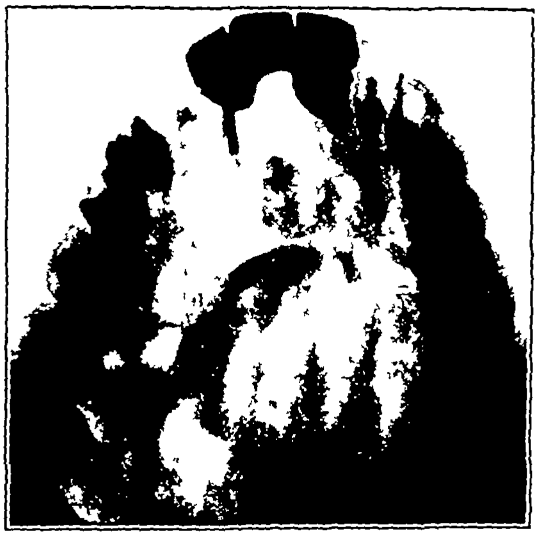
Fig 1—Appearance of nest of teeth and large tooth (Roentgenogram by Ream)

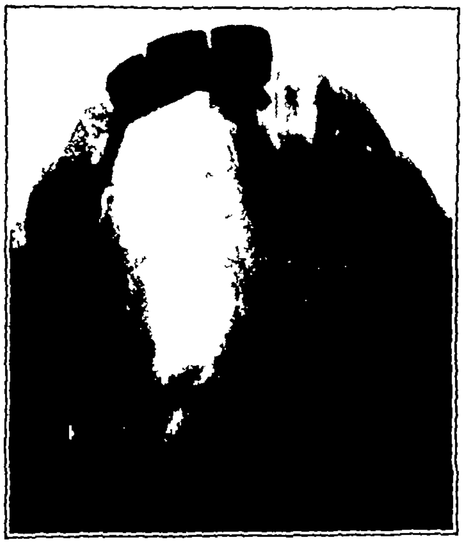
Fig 2—Appearance after removal of all teeth (Roentgenogram by the author)

Hopple[1] has reported a case of atrophic rhinitis in which the patient was treated for certain periods, and eventually a tooth was forced through the floor of the nose Joachim[2] reports a case in which the patient was treated for specific ulceration of the nasal septum, and a tooth was found in the floor of the nose

The delay in the healing of the fistula leading from these teeth, in specific cases is recorded by Ingersoll[3] Removal of the cause is not always followed by immediate closing of the sinus

REPORT OF CASE

This case, with the operation, is reported because it appears to be at least unique in that several teeth were found and removed

Mrs X, aged 34, consulted me concerning a bridge extending from the left lateral incisor tooth supplying the left central to the right central She asked whether the teeth crowned could be in any way associated with the fistula draining into the right nostril Examination was made of the bridge, and also the fistula observed, the septum was deflected entirely, closing the opening on the right side A roentgenogram was immediately made through the anterior teeth, which showed an abscess on the left lateral incisor, and also a foreign formation near its apex A larger film was used and a second exposure made with the tube pointing through and above the nose (Fig 1) In this roentgenogram a large tooth will be seen which, according to the patient's history, was judged to be the unerupted central incisor, which had never appeared

The following history was secured from the patient The sore or sinus in the nose had been extremely annoying, breaking and running with bloody fluid, four or five times a day She could not breathe through either nostril, and had not done so for about eight years Each time, following the discharge of the fistula, she became very nervous, suffering from intense pain or pressure in the upper portion of her face, until she had become an extremely hysterical patient This pressure was also noticed in her efforts at placing her tones high in her head while singing, and when forcing tones she imagined something moved in her head, so that she was compelled to give up her vocal efforts Six years ago, the patient collapsed and remained unconscious for two days She states that her case was diagnosed as nervous prostration, and that she never fully recovered from this attack Two years ago, while dancing, she had felt an extreme pressure in the upper part of her face and again collapsed, this time remaining in a comatose condition for six days She states the diagnosis was a "blood clot on the brain" She has been in a serious nervous condition since with periodic headaches, following a feeling of pressure and the breaking of the fistula in the right nostril

Dr W H Haskin was consulted, and the diagnosis verified with the opinion that the tooth highest in the nose was deflecting the septum to the side, and causing the points of inflammation in the right nostril

No tuberculin or Wassermann test was made

The operation was performed in my office with Dr W V Ryan assisting Novocain and epinephrin was the anesthetic used, with infra-orbital, tuberosity and palatine injections

The left lateral root was removed, and the incision over the apex carried to the base of the nose, with removal of bony tissue, by the use of the chisel and proper dental engine drills and burrs, exposing the nest of six supernumerary teeth Considerable force and care was required in their removal, as they were packed against each other tightly and embedded in the bony tissue

The patient's breathing was difficult, and after the removal of these teeth, a very pronounced dilatation of the nostril was noticed, and she exclaimed about "a wonderful breath of air" The only pain experienced during this operation was in her right ear, which was intense when pressure was placed on these teeth The nervous condition of the patient prevented further operating, and the wound was packed for ten days

A more profound anesthesia was secured for the next operation, and an injection made into the nasal cavity With much difficulty and cutting of adhesive and bony tissue, the large unerupted central incisor tooth was exposed and found to be firmly embedded By the use of the engine drill and chisel, it was cut off at the incisal edge and carefully worked down until it could be turned into the wound, in order to avoid splitting the surrounding bony tissue The illustration of the tooth (Fig 3), therefore does not show its full length, but it was a perfectly formed central incisor

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[1] Hopple Brooklyn Med Jour, 1900, xiv, 403
[2] Joachim Orleans Parish Med Soc, 1895, iii, 52
[3] Ingersoll Laryngoscope, 1903, xiii, 688

A minimum amount of tissue was destroyed, and after the wound was healed, no depression was apparent from the outside and only a small evidence over the teeth in the mouth

One month after the operation, the headaches and neuralgia had ceased, the hysterical condition was much improved, and the breathing was normal through the nose The sinus in the nose, as in some cases quoted, was slow to heal, however, the bleeding appeared only occasionally

A removable bridge was placed in the mouth to restore the lost central and lateral, and the patient was dismissed

The pressure of these supernumerary teeth as well as the central incisor, forcing the septum will be realized when the curve of the larger of the extra teeth is noted in Figure 3 The three small teeth are wrapped around each other

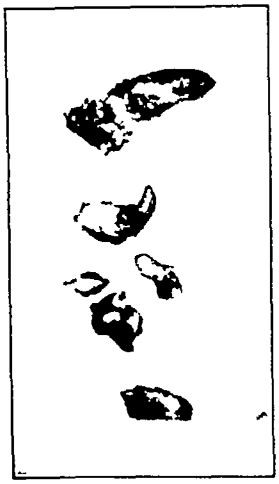

Fig 3 —Teeth removed Small group shows three teeth curved around each other (Photograph by the author)

CONCLUSION

I believe that this case is an appeal for all who are treating the mouth, nose and surrounding parts to forestall any chance of error by the use of the roentgenograph The surgeon may relieve many cases of difficult diagnosis, and every dentist who treats the roots of teeth should not work without the daily use of the roentgenograph

452 Fifth Avenue

ORTHOPEDIC TREATMENT IN HEMIPLEGICS OF LONG STANDING*

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It is generally accepted that if a hemiplegic has not improved within a short time, he will never improve, on the contrary, contractures will develop These patients usually become chronic invalids It will be of interest, therefore, to see what orthopedic treatment in old and neglected cases can do This is a plea that the orthopedic treatments should be started early Patient work will bring excellent results

The prognosis which the attending physician usually gives to the patient is influenced by the teachings of the neurologists which is as follows [1]

> Patient recovers the power of walking in a short time, viz, six to eight weeks, but muscle retraction and shortening (contractures) almost invariably occur The depth and duration of the apoplectic seizure will give some hint to the progress in the future The more incomplete the apoplexy, the better are the chances for recovery The course during the first few weeks will decide this point If, during the first month, the hemiplegia continues unchanged in intensity or if only a trace of movement sets in in the affected limb, it will improve very little On the other hand, a certain degree of movement setting in during the first few days, and steadily advancing during the first period, is a very favorable sign As soon, however, as the first evidence of contracture sets in there is hardly any prospect of complete restoration

Dana,[2] Church and Peterson[3] and Starr,[4] in their textbooks, state that after two years, no further gain is to be expected Curschmann[5] is of similar opinion and says

> Gradual improvement after severe attacks may continue for months, but whatever has not disappeared in from six to nine months must be regarded as a permanent defect The more quickly after an attack the improvement in motility appears, the more favorable is the progress

We can easily understand why the general practitioner, influenced by these teachings, usually watches the case for from three to four months, and is satisfied with the improvements attained by that time If the patient is then able to walk, he considers himself quite fortunate If the contractures develop, he is put in the class of "chronic invalid" and is either allowed to remain in the house or sent to a "home for incurables" Many physicians are a little less cautious and do nothing to the paralyzed muscles for the first three months, waiting to see what improvement the patient will get from the medications, and only then is he sent to the neurologist and very seldom to the orthopedist Of course, it is needless to repeat that, in many cases, the contractures are already present at that time

The case which we have to report proves many of these statements and emphasizes new ones We hope, therefore, that it will interest the readers to follow the details

CASE REPORT

History—M W, man, aged 52, admitted to the Montefiore Hospital at the age of 27, had a clear case of right sided hemiplegia with motor aphasia He became paralyzed at the age of 26 As far as we can find in the history, the cause of the apoplexy was some trauma, sustained three weeks previous to the onset of unconsciousness He was unconscious for twelve days, which indicates that the attack was quite severe When he regained consciousness, he suffered severely from dizziness, vertigo and headaches, and was admitted to Mount Sinai Hospital A decompression was done which relieved the symptoms but not the hemiplegia He was admitted to the Montefiore Home and Hospital one year after the attack, unable to walk and presenting some contractures (Probably nothing was done during that interval to prevent contractures) He was put in the ward for chronic invalids and was confined to the chair and bed for twenty-one years, during which time he did not leave the home even once Following the prevailing opinion, he was considered hopeless during all this time, and therefore received no treatments He did not improve spontaneously, but, on the contrary, his paralyzed extremities became contracted He did not regain his speech, but learned to write with the left hand so that he could make himself understood

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* Read in part before the Orthopedic Section Academy of Medicine Nov 19 1915

[1] Oppenheim Hermann Text Book of Nervous Diseases Edinburgh Otto Schultze & Co 1911 ii 792

[2] Dana C L Text Book of Nervous Diseases Ed 7 New York, William Wood & Co 1908 p 467

[3] Church Archibald and Peterson Frederick Nervous and Mental Diseases Ed 8 Philadelphia W B Saunders Company 1914 p 223

[4] Starr M Allen Organic and Functional Nervous Diseases Philadelphia Lea & Febiger 1913 p 495

[5] Curschmann Hans Text Book on Nervous Diseases Burr's English Edition Philadelphia P Blakiston s Son & Co 1915 ii 667 681

In 1911 we were doing some work on hemiplegic and neurologic patients and had much success This patient, who is intelligent, observing this, implored us in a touching note to endeavor to make him walk Even when we explained to him that he would have to undergo a great deal of suffering, he still persisted in his request We decided to help him reach his goal

Examination—The physical examination made in 1911 showed marked adduction of the right upper extremity The forearm was flexed to an acute angle, it could not be extended by force more than to an angle of 90 degrees The wrist was flexed on the forearm, the fingers were markedly contracted and held in a position of a closed fist with the thumb inside the palm

Lower Extremity The right thigh was flexed on the abdomen at an angle of 45 degrees, and rotated inward The leg was flexed on the thigh at an angle of 100 degrees, by using considerable force, the leg could be extended to an angle of 112 degrees The foot was in a position of talipes equinovarus (that is, where the foot is turned inward and the toes downward) The toes were flexed and bent on themselves The foot was very firmly fixed

Here there was practically a bedridden invalid of twenty-one years' standing His thigh was flexed on the abdomen and the leg so flexed on the thigh that the heel and part of his acquired clubfoot pressed into his buttocks—and this of twenty-one years' standing

Before undertaking operative procedures, we urged him to stand on his good foot for from ten to fifteen minutes about ten times a day so as to train himself to use that limb, as he had not borne any weight on it for twenty-one years We also ordered massage for the paralyzed side so as to develop somewhat his atrophied muscles

Operations and Results—In December, 1911, we performed a tenotomy of the biceps, semitendinosus, semimembranosus and popliteal fascia and, using considerable force, we brought the leg to an angle of 135 degrees We might have been able to extend it more, but we feared rupture of the popliteal artery, which had been in a contracted position for so many years At the same time we corrected the foot slightly We put the limb in a plaster of Paris cast The cast was left on only a few weeks, and then we started daily baking (Bier's active hyperemia), massage and stretching slowly the leg and foot After each massage, the limb was put back into the cast The process was rather painful, but the patient stood it well We changed the splint from time to time, making it straighter as we gained motion in the knee It took almost a year before the knee was perfectly straight

In December, 1912, that is, one year later, we did a tenotomy of the Achilles tendon, and by brisement force corrected the foot Daily baking, massage and exercises were then carried out regularly In March, 1913 (three months after the second operation), his knee and foot were straight, a brace was fixed up for him, and the patient for the first time left the ward Within a few weeks, he walked so well that he asked to go downtown himself (a distance of one and a half hours' ride by elevated trains, car and the short walks from and to the cars) and brought us a report as to what changes Manhattan had undergone in the twenty-two years that he had been in the hospital, or as he called it "imprisoned there" You can easily imagine his joy

He continued his active exercises so that within a few months he could flex voluntarily his knee and could bear weight on the limb without the brace

A few months later, we began to treat his upper extremity By brisement force we brought down the elbow to an angle of 100 degrees and straightened the fingers and wrist and put them in a plaster cast After ten days, baking, massage and exercises were instituted He has improved nicely The elbow can be flexed voluntarily and can be extended to an angle of 135 degrees The fingers and wrist are straight, but there is very little voluntary motion in them It is doubtful whether he will regain power in his fingers, but with the power he has in his shoulder and elbow, we may be able to fix up some brace and permit him to use the fingers We are still continuing the exercises, as we feel that in a case of such long duration, one should not be discouraged quickly Even if we do not reach this aim, it is worth the work to make it possible for a patient to walk

COMMENTS

1 Perhaps the chief point of interest in this case is the long standing contracture deformity (twenty-one years) and its correction after this long period of time

2 Another point of interest is the early onset of the hemiplegia, at the age of 26 years, and the classical type of the hemiplegia—complete unilateral paralysis with complete motor aphasia At this comparatively early age, we are wont to search for specific disease affecting the blood vessels We have failed to find any objective evidence of this, and the Wassermann has been found negative Further, now 52 years old, with twenty-five years since the attack, the patient appears well as regards his general health

3 We have referred to the fact that we did not fully correct the deformities of the lower extremity at our first séance The condition of the blood vessels must be considered This figures especially in the case of the average hemiplegic, in which the attack is later in life, as a rule, and these subjects are apt to have rather marked arteriosclerosis

4 It is observed that the hand deformity has not improved to the same degree as that of the lower extremity This is probably due to the more delicate action of the hand muscles It is also largely due to the difference of the contraction In the lower extremity it was a condition of real contracture, and the limb when corrected and properly treated, to use an apt expression, "stayed put" In the upper extremity, especially the hand, there is contraction But there is the knife blade spasticity The fingers can be readily straightened, but they snap back In other words, they do not "stay put" This condition is not very amenable to the treatments we have considered

5 The favorable results in this case indicate clearly that there is no time limit for improvement in hemiplegia Franz, Sheetz and Wilson[6] have recently reported improvements in five cases of hemiplegia of long duration, and we feel certain that reports of such cases should stimulate all the physicians to resort to orthopedic methods in similar cases, no matter at what stage they are seen

6 We might recall the emphasis recently laid by Mayer[7] that the deformities encountered in hemiplegics should be prevented by maintaining the paralyzed limbs in the proper position by means of splints

7 We had a considerable number of patients in the Montefiore Hospital who, when admitted within the first year after the apoplectic attack, were placed in our service We put the knees and feet in splints, and the patients were able to walk within a short time

This case further suggests that A Patients with hemiplegia should receive proper orthopedic treatments as soon as they regain consciousness

B Light massage should be used, and active and passive exercises early As soon as the patient is able, he should be urged to stand up

C Even in the old and neglected cases, great improvement can be obtained, especially in walking, hence one should work patiently on any hemiplegic who comes under his professional care

40 East Forty-First Street—1210 Tinton Avenue

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[6] Franz, S I Sheetz, M E, and Wilson, A A The Possibility of Recovery of Motor Function in Long Standing Hemiplegia, The Journal A M A, Dec 18, 1915, p 2150

[7] Mayer, L The Necessity for Orthopedic Training in Hemiplegia Berl klin Wchnschr June 7, 1915, abstr The Journal A M A, July 24 1915 p 366

REPORT OF A CASE OF BANTI'S DISEASE

Karl C Eberly, M D, Fort Wayne, Ind

The rareness of this disease is my reason for reporting this case

History—Mrs R J, aged 63, married, consulted me, April 7, 1915, complaining of constipation, gas in stomach and bowels, loss of strength and weight and pain in left side at margin of ribs The patient had three healthy children, was doing housework and had always worked hard The family history was negative She had had children's diseases with good recovery, chronic cough for twenty years, had been constipated since childhood and for the previous twelve years had suffered from periodic attacks of cyanosis involving the hands and feet She had had malaria when a child but no other fever Menstrual history was negative The menopause had occurred twelve years previously There were no unexplained miscarriages

Present Trouble—Although the patient had been constipated for years and had suffered much from intestinal putrefaction, she did not become incapacitated until September, 1914 At that time mucous colitis with much gas and considerable abdominal pain was present She had lost weight, weighing 156 pounds in 1911, and in December, 1914, 122 pounds She was weak, unable to do much work, and had a poor appetite There was no nausea or vomiting except that precipitated by severe coughing There was pain in the left hypochondrium Lactic acid bacillus tablets, sodium cacodylate administered hypodermically and rest improved her condition so she was able to do her housework However, the pain in her left side continued It was a dull ache, occasionally sharp and referred to the ribs For twelve years she had noticed periodic attacks of a cold cyanotic condition of the hands and feet, which apparently had no relation to the intensity of the pain in the region of the spleen, and was relieved by heat For the last few years she has suffered from the cold She had never had palpitation of the heart or difficulty in breathing even after exercising Her greatest complaint, when I was first called, was the pain in the region of the spleen, which had become very severe after an unusually hard trip

Physical Examination—The patient was emaciated and weak, and her skin was the color of bronze Although of a dark complexion, she had noticed her skin becoming this color for the last twelve years The lips and the tips of the ears and nose were dusky, the sclera was pale but not discolored, the neck and heart were negative, the breath sounds were high pitched, and expiration was prolonged as in chronic bronchitis, the abdomen was flaccid and tympanitic, and there was a slight general tenderness, but no localized area, the liver was negative A mass was felt in the left hypochondrium, extending 3 inches below the costal margin This was notched the edge was easily palpated, and the surface was smooth and hard and very tender The pelvis was negative Reflexes were present and normal The hands and feet were cyanotic and cold, but not swollen The temperature was normal at this examination and at all subsequent readings

Laboratory Findings—Blood Hemoglobin, 90 per cent, red cells, 5,600,000, white cells, 9,500, smear normal, except for slight paling of red cells (no plasmodium of malaria) Differential, neutrophils, 53 per cent, acidophils, 3 per cent, small lymphocytes, 26 per cent, large lymphocytes, 14 per cent, and transitionals, 4 per cent Wassermann and tuberculin reactions were negative The sputum and urine were repeatedly negative The high blood count proved to be due to the cyanotic condition of the finger from which the blood was taken Subsequent counts gave a slight anemia of the secondary type with a constant increase in the large lymphocytes averaging 10 per cent

Diagnosis, Treatment and Course—On these findings a diagnosis of Banti's disease was made The general condition of the patient prohibited a splenectomy, so tonics, sodium cacodylate and Roentgen-ray treatments were resorted to After six treatments the pain and soreness were much relieved, but the patient developed a herpes zoster on that side and the use of the Roentgen ray was discontinued The active herpetic lesion cleared up in ten days, but left an itching, smarting and burning pain that resisted all local treatment and finally had to be controlled by morphin for several weeks After recovery, the patient was very weak, but complained of no pain in the spleen In October, 1915, she went to Florida thinking the climate would benefit her In December, she began to bloat and lose strength, and as this continued she returned here, February 4, at which time I saw her The abdomen was markedly distended with fluid and the legs were swollen to the knees The patient stated that she had been bloated in this manner for four weeks and that her legs had been swollen for two weeks About the middle of January, she had had hematemesis which was followed for several days by the passing of tarry stools Although very weak she had stood the trip well and was free from pain The bronze discoloration of the skin had disappeared and been replaced by a yellowish tinge The sclera, however, showed no icteric discoloration The next day I withdrew 6 quarts of fluid from her abdomen This fluid was of a light amber color, the specific gravity was 1 008, the albumin 1 per cent, and it contained a few lymphocytes and endothelial cells She passed only a few ounces of urine during the twenty-four hours, but it was still negative and remained so except for the appearance of bilirubin The secondary anemia had increased After the tapping, the spleen was easily felt and, though not so tender, was in the same condition as before I withdrew about 2 gallons of fluid February 15 and again March 3 and April 1 After the last tapping the spleen was found to be much contracted

The patient had felt her case to be hopeless and with this apparent sign of improvement she was so much encouraged that she left her bed, ate at the table with a better appetite than she had had for many months, and sat up for several hours Much to her disappointment ascites again developed in ten days On the advice of another physician she was operated on April 27, for cirrhosis of the liver, a Talma operation being done Two and one half gallons of fluid were drained off The liver was found to be small and hard and the spleen only slightly enlarged and surrounded by firm adhesions The patient rallied well from the operation and progressed nicely for several days, when she died from gastro-intestinal hemorrhages

COMMENT

The absence of any demonstrable etiology, the chronicity of the splenic pain, the pigmentation of the skin, the splenomegaly, the hematemesis, and finally the ascites with hemolytic changes, make this, I believe, a typical case of Banti's disease

The periodic attacks of cyanosis may or may not have been part of the syndrome

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KNEE BLOCK FROM AVULSION OF BONE FRAGMENT BY POSTERIOR CRUCIAL LIGAMENT

Roscoe R Kahle Ph B, M D, Columbus, Ohio
Surgeon to Grant Hospital

History—K, man aged 24, athletic and muscular, referred by Dr E L Harney stepped from an express wagon down on an ice cream freezer, Sept 15, 1915 The cracked ice on which he stepped with his right foot gave way, causing outward rotation With the leg in abduction and the knee semiflexed, he fell to the ground From his description of the fall it is quite impossible to determine the precise nature of the wrench which his knee received He arose without difficulty, walked as usual for about two blocks, when his knee suddenly became locked, and he fell helpless The examining physician found the knee partially flexed and fixed Only slight motion in either direction could be borne All maneuvers to cause, complete extension were fruitless A fixation splint was applied pending Roentgen examination

Examination—The roentgenograms revealed a fragment of bone free in the joint cavity This had been broken anteriorly from the outer edge of the inner condyle of the femur This location corresponds to the femoral attachment of the posterior crucial ligament Our diagnosis was that, at the time of the injury, the posterior crucial ligament was brought to great tension, causing rupture at its femoral insertion Manipulative efforts to dislodge the fragment and facilitate extension were of no avail The surgical removal of the bone block, therefore, seemed imperative

Operation and Result—A large U-shaped skin flap was lifted, exposing the joint area With a second scalpel a vertical incision along the inner margin of the patella opened the joint cavity By the aid of retractors a fair view of the joint was secured The small detached piece of bone, shown in the roentgenograms, was readily located and removed A second fragment, loose but undetached, was taken away It was observed that the foremost fibers of the ligament had been instrumental in the avulsion of the fragments The balance of the ligament was firmly attached to the femur The operation was completed without drainage The leg was fully extended, and a plaster cast with a knee window was applied and left in place for about two months The pain and swelling during convalescence were negligible

For the past four months, Mr K has been walking without assistance, and he now walks without a limp Flexion is nearly normal, and will probably be entirely so in a few more months

COMMENT

In a very complete discussion[1] of similar, though not identical knee injuries, Jones of Liverpool and S Alwyn Smith of Winnipeg state that rupture of the posterior crucial ligament alone is a rare accident Pagenstecher has reported one case treated by suture, though he does not mention any separation of bone fragments

It is interesting to note that in most cases of complete dislocation of the knee joint, with rupture of both crucials, serviceable joints are the rule after prolonged fixation in *complete extension* There is, therefore, no valid indication for primary operation to restore ruptured crucials, except when complicated by bone fragments which prevent complete extension of the joint The most common error in management is the disposition to move the joint before sufficient time has elapsed for sound healing

350 East State Street

SUDDEN BLINDNESS ASSOCIATED WITH CHOKED DISK AND NASAL SINUS DISEASE

Edward J Brown, M D, Minneapolis

Mrs Rose H, aged 49, Russian Jewess, referred by another poor patient, came to me, Jan 31, 1916, complaining that her left eye had become suddenly blind three weeks before, and that she had consulted several private oculists, besides going to the university clinic, without benefit At the clinic she had been advised to have her teeth removed, and that was done two weeks before her visit to my office The patient had suffered from pain in her head (temples) and back and had experienced more or less dizziness There had been a lacrimal abscess fifteen years before and she still suffered from lacrimal obstruction Otherwise the history was negative She reported that one physician had made a urinalysis with negative result

Vision of the right eye was normal, the left could dimly recognize a hand at a distance of 18 inches Efforts to map out the field were unsuccessful, but the inner (nasal) field seemed to be wholly wanting The right pupil was 3 mm in diameter and of normal reaction, the left was 7 mm and immobile The retina and disk of the left eye were markedly swollen, and there was a small hemorrhage on the inferior quadrant of the disk The patient denied having any nasal trouble, but I found a septum markedly deviated to the right, atrophy of the left inferior turbinal, and very large middle turbinal, the latter covered with crusts She refused to have any nasal treatment, but consented to wash the nares with alkaline solution at home Transillumination was negative

Five days later the woman returned The eye condition remained as at first visit except that the left counted fingers at 5 feet Pus was flowing freely from the left middle fossa posteriorly, as shown by the Holmes nasopharyngoscope

The middle turbinate and the ethmoid cells were at once removed, and the woman declared that she could see better directly after the operation

On the following day, the sixth, she could count fingers at 20 feet I have not seen the woman since, but she reports still further improvement

524 Syndicate Building

Therapeutics

BLOOD PRESSURE

The study of the blood pressure has become a subject of great importance in the practice of medicine and surgery No condition can be properly treated, no operation should be performed, and no prognosis is of value without a proper consideration of the sufficiency of the circulation, and the condition of the circulation cannot be properly estimated without an accurate estimate of the systolic and diastolic blood pressure However perfectly the heart may act, it cannot properly circulate the blood without a normal tone of the blood vessels, both arteries and veins Abnormal vasodilatation seriously interferes with the normal circulation, and causes venous congestion, abnormal increase in venous blood pressure, and the consequent danger of shock and death Increased arterial tone or tonicity necessitates greater cardiac effort, to overcome the resistance, and hypertrophy of the heart must follow This hypertrophy always occurs if the peripheral resistance is not suddenly too great or too rapidly acquired In other words, if the peripheral resistance gradually increases, the left ventricle hypertrophies, and remains for a long time sufficient If, from disease or disturbance in the lungs, the resistance in the pulmonary circulation is increased, the right ventricle hypertrophies to overcome it, and the circulation is sufficient as long as this ventricle is able to do the work If either this pulmonary increased pressure or the systemic increased pressure persists or becomes too great, it is only a question of how many months, in the case of the right ventricle, and how many years, in the case of the left ventricle, the heart can stand the strain

If the cause of the increased systemic tension is an arterial fibrosis, sooner or later the heart will become involved in this general condition, and a chronic myocarditis is likely to result If, on the other hand, there is a continuous low systemic arterial blood pressure, the circulation is always more or less insufficient, nutrition is always imperfect, and the physical ability of the individual is below par It is evident, therefore, that an abnormally high blood pressure is of serious import, its cause must be studied, and effort must be made to remove as far as possible the cause On the other hand, a persistently low blood pressure may be of serious import, and always diminishes physical ability If possible, the cause should be determined, and the condition improved

No physician can now properly practice medicine without having a reliable apparatus for determining the blood pressure both in his office and at the bedside It is not necessary to discuss here the various kinds of apparatus or what is essential in an apparatus for it to give a perfect reading It may be stated that in determining the systolic and diastolic pressure in the peripheral arteries, the ordinary stethoscope is as efficient as any more elaborate auscultatory apparatus

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[1] Jones, Robert, and Smith, S A *Brit Jour Surg*, July, 1913

It is now generally agreed by all scientific clinicians that it is as essential — almost more essential — to determine the diastolic pressure as the systolic pressure therefore the auscultatory method is the simplest, as well as one of the most accurate in determining these pressures Of course it should be recognized that the systolic pressure thus obtained will generally be some millimeters above that obtained with the finger, perhaps the average being equivalent to about 5 mm of mercury The diastolic pressure will often range from 10 to 15 mm below the reading obtained by other methods Therefore, wider range of pressure is obtained by the auscultatory method than by other methods This difference of 5 or more millimeters of systolic pressure between the auscultatory and the palpatory readings should be remembered when one is consulting books or articles printed more than two years ago, as many of these pressures were determined by the palpatory method

Sometimes the compression of the arm by the armlet leads to a rise in blood pressure[1] It has been suggested that the diastolic pressure be taken at the point where the sound is first heard on gradually raising the pressure in the armlet

In some persons the auscultatory readings cannot be made, or are very unsatisfactory, and it becomes necessary to use the palpation method in taking the systolic pressure In instances in which the auscultatory method is unsatisfactory, the artery below the bend of the elbow at which the reading is generally taken may be misplaced, or there may be an unusual amount of fat and muscle between the artery and the skin

The various sounds heard with the stethoscope, when the pressure is gradually lowered, have been divided into phases The first phase begins with the first audible sound, which is the proper point at which to read the systolic pressure The first phase is generally, not always, succeeded by a second phase in which there is a murmurish sound The third phase is that at which the maximum sharp, ringing note begins, and throughout this phase the sound is sharp and intense, gradually increasing, and then gradually diminishing to the fourth phase, where the sound suddenly becomes a duller tone The fourth phase lasts until what is termed the fifth phase, or that at which all sound has disappeared As previously stated, the diastolic pressure may be read at the beginning of the fourth phase, or at the end of the fourth phase, that is, the beginning of the fifth but the difference is from 3 to 10 mm of mercury, with an average of perhaps 5 mm , therefore the difference is not very great When the diastolic pressure is high, for relative subsequent readings, it is much better to read the diastolic at the beginning of the fifth phase

It is urged by many observers that the proper reading of the diastolic pressure is always at the beginning of the fourth phase However, for general use, unless one is particularly expert, it is better to read the diastolic pressure at the beginning of the fifth phase There can rarely be a doubt in the mind of the person who is auscultating as to the point at which all sound ceases There is frequently a good deal of doubt, even after large experience, as to just the moment at which the fourth phase begins With the understanding that the difference is only a few millimeters, which is of very little importance, when the diastolic pressure is below 95, it seems advisable to urge the reading of the diastolic pressure at the beginning of the fifth phase

The incident of the first phase, or when sound begins, is caused by the sudden distention of the blood vessel below the point of compression by the armlet In other words, the armlet pressure has at this point been overcome Young[2] believes that the murmurs of the second phase, which in all normal conditions are heard during the 20 mm drop below the point at which the systolic pressure had been read, is "due to whirlpool eddies produced at the point of constriction of the blood vessel by the cuff of the instrument" The third phase is when these murmurs cease and the sound resembles the first, lasting he thinks for only 5 mm The third phase often lasts much longer He thinks the fourth phase, when the sound becomes dull, lasts for about 6 mm

(To be continued)

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[1] MacWilliams and Melvin Brit. Med Jour Nov 7 1914

[2] Young Indiana State Med Assn Jour, March, 1914

New and Nonofficial Remedies

The following additional article has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association Its acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies"

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation but that, so far as known, it complies with the rules adopted by the Council

W A Puckner, Secretary

STANDARD RADIUM SOLUTION FOR DRINKING (1 microgram Ra)—A solution containing radium chloride equivalent to 1 microgram of radium (Ra) and 1 3 mg of barium chloride per bottle of 60 Cc

Actions and Uses—See Radium (N N R, 1916, p 266) In view of the small barium content, it is claimed that the physiologic action of barium may be ignored

Dosage—See Radium (N N R, 1916, p 267) Contents of one bottle after each meal

Manufactured by the Standard Chemical Co, Pittsburgh Pa (The Radium Chemical Co Pittsburgh, Pa) No U S patents or trade marks

One Gm of crystallized barium chloride is added to 40 liters of distilled water and the solution allowed to stand for a day then 800 micrograms of radium element in the form of a solution of 60 per cent pure radium chloride is added together with 40 Cc of normal hydrochloric acid This solution after analysis by the emanation method to confirm its radium content, is then delivered into the bottles by means of an automatic pipet delivering 50 Cc of the solution which contains as stated, 1 3 mg of barium chloride and 1 microgram of radium element The bottles are then filled almost full to the stopper with distilled water

The amount of radium may be determined by the 'emanation method of Rutherford and Boltwood as described in Rutherford's Radioactive Substances and Their Radiations, Cambridge, 1913, p 659

Fuel Requirement.—About 2 500 calories are required in the daily food of man whose occupation is of sedentary character As a matter of fact, statistics show that the inhabitants of cities take this amount of fuel daily The latest statistical proof that the food supply of a great city is regulated by the needs of its inhabitants may be found in the report of Gautier which shows that in Paris an average of 2 500 calories of energy are daily supplied to each inhabitant—Lusk, The Fundamental Basis of Nutrition

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SATURDAY, JULY 1, 1916

METABOLISM IN PREGNANCY

The metabolism of pregnancy has received comparatively little study, particularly in the human species, for which the opportunities of suitable investigation are not always easily procurable under circumstances that make scientific observations entirely satisfactory The few researches of importance which are on record and commonly quoted by writers on the subject are almost entirely confined to the latter part of the period of gestation, usually just prior to parturition Experimental studies which have been conducted on animals during the earlier periods of pregnancy have indicated in several instances that there may be a negative nitrogen balance — an apparent loss of protein to the organism at that time Thus Hagemann[1] concluded that the formation of the fetus occasions a loss of protein from the mother's body, even when there is an abundance of nourishment This suggestion that the development of the fetus is accompanied by the destruction of maternal protoplasm has led Ver Ecke[2] to make the somewhat dramatic statement that gestation constitutes a sacrifice of the individual for the good of the species In this sense the embryo might seem a parasite preying on the maternal protein

Several years ago Murlin[3] of the Cornell University Medical College in New York City, to whom we owe excellent studies of metabolism in pregnancy, summarized the findings up to that time With respect to the first half of this period of fetal development, he said, the weight of evidence, from observations on animals, is that a period of diminished retention or of minus nitrogen balance is likely to occur at about the stage which corresponds to the period of morning sickness of women With respect to the second half of the period of pregnancy there has been perfect agreement that more nitrogen is regularly ingested than is excreted, provided a sufficient supply of protein and potential energy is available in the diet

Until recently no one has attempted to follow extensively the nitrogen balance in pregnant women earlier than the sixteenth week This paucity of information lends special value to the studies lately reported from the obstetric clinic of the Johns Hopkins Hospital by Wilson[4] One case in his records, in which the period of estimation of the nitrogenous metabolism probably extended from the tenth to the fourteenth week of pregnancy, is believed to represent the earliest pregnancy on which such experiments have been carried out in women for any extended period of time In this person, storage of nitrogen, rather than the expected loss, was found to be taking place from the time the observations were begun until their close The actual gain amounted to 60 gm of nitrogen in these four weeks Additional observations, old and new, show further that storage of nitrogen in the healthy woman who goes through a normal pregnancy continues through the entire duration of the intra-uterine development, being most marked during the last few weeks, when the fetal needs are at a maximum

Wilson suggests that in the pregnant woman storage of nitrogenous products begins at a much earlier period than has hitherto been supposed, possibly the organism may acquire the capacity for storing nitrogen from the very beginning of pregnancy During the tenth to fourteenth weeks of pregnancy, regarding which the new facts are now available to indicate a retention of several grams of nitrogen per day, the daily need of the developing ovum must be extremely small The total nitrogen content of the entire ovum is estimated not to exceed 3 gm at this period Accordingly it is reasonable to assume, with Wilson, that most of the nitrogen stored must have been added to the general maternal organism in some form, possibly to be drawn on later by the developing tissues when the need becomes greater It is not unlikely that a portion, at least, is utilized in the growth and hypertrophy of the uterus and the breasts The uterus increases in size up to 800 or 1,000 gm, and may represent nearly 40 gm of nitrogen An enlargement of the breasts amounting to 500 gm would account for 17 gm of nitrogen Even the sum of these, 57 gm, will not account for the utilization of the far larger total gains of nitrogen reported during pregnancy

Evidently, then, the "nitrogen capital" of the maternal organism is increased during pregnancy The reserve may become exhausted during the puerperium and the period of lactation Of course, nausea, vomiting and gastro-intestinal disturbances so frequently noted in early pregnancy at once restrict the food intake and produce a different story in the metabolic balance But Wilson remarks that in the experience of his clinic at least half of the patients go through the entire period of pregnancy without any of these disagreeable symptoms. The question therefore arises whether women suffering from such disturbances are to be regarded as perfectly normal. At any rate it has become unlikely that normal pregnancy represents a real sacrifice of the old individual for the new. Perhaps it is an instance, as it has been called, of "homogeneous and harmonious symbiosis" which is "not an occasion of loss but of profit to the maternal organism as well as to the embryo."[3]

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[1] Hagemann Arch f Anat u Physiol, 1890, 577, Inaug Diss, Erlangen, 1891

[2] Ver Ecke, A Les echanges materiels dans leur rapports avec les phases de la vie sexuelle, Mem courronnes de l'Acad roy de belgique, 1901, xv, No 7

[3] Murlin, J R Metabolism of Development, II, Am Jour Physiol, 1910, xxvii, 177

[4] Wilson K M Nitrogen Metabolism During Pregnancy, Bull Johns Hopkins Hosp, 1916, xxvii, 121

CAVEAT VENDOR!—THE NEW CONSCIENCE

The Supreme Court of the United States has recently handed down a decision that is of more than ordinary significance to those who are interested in truth and decency in advertising. In effect, the court has held that an advertiser may be guilty of fraud if, through misrepresentation, he leads a purchaser to invest in his goods, even though the goods advertised are worth the money asked for them. A real-estate company had used the United States mails to advertise some Florida land for sale. The company was indicted for using the mails to defraud on the ground that false representations had been made concerning the land. It was not denied, in the indictment, "that the land was worth fully as much as was to be obtained therefor." The lower court, before which the case was tried, held that the business was legitimate on the ground that it was not an offense against the statute to raise the expectations of a purchaser, even if those expectations were not fulfilled, provided the purchaser was given value received for his money.

The United States Supreme Court, however, with that greater breadth of vision for which our greatest tribunal has distinguished itself, took a more human and equitable view of the matter. Justice McKenna, who wrote the opinion, declared: "An article alone is not necessarily the inducement and compensation for its purchase. It is in the use to which it may be put, the purpose it may serve, and there is deception and fraud when the article is not of the character or kind represented and hence does not serve the purpose." It was pointed out in the decision that a number of the representations made by the real-estate company, such as the alleged fertility of the soil, the kind of roads, the presence of hotels, the alleged excellence of transportation facilities, etc., if they were false, would be in effect a scheme to defraud by leading persons to purchase the land who would otherwise not have done so.

The extension of this principle to other phases of advertising suggests many interesting questions. It would mean, for instance, that a concern which advertised a "female remedy" to cure "falling of the womb" would be guilty of fraud, if the preparation would not produce this result, even though the product might be a meritorious one as a remedy for functional dysmenorrhea. It would mean that a man who sold a mixture as a cure for consumption, which was powerless to produce such results, would be a swindler, even though his preparation might have some virtue as a cough medicine. It would mean that a product which might be efficacious as a wart-remover could not be sold as a "cancer cure" without subjecting the seller to the charge of defrauding and swindling the sick. In short, the decision means that the great purchasing public shall be given a fairer and squarer deal than it has been in the habit of getting. It means the substitution for the old Manchester doctrine of *Caveat emptor!* the more enlightened principle, *Caveat vendor!* And, surely, in no place is such a change in our economic ethics more necessary than in the sale of preparations for the relief or mitigation of disease.

STATE RIGHTS, STATE DUTIES, AND THE HARRISON NARCOTIC LAW

The decision of the United States Supreme Court in the case of *United States* v. *Jin Fuey Moy,* decided, June 5, and referred to in previous issues,[1] is a reminder that the states still have important duties to perform with respect to the sale of opium, cocain and other habit-forming drugs. The Harrison Narcotic Law may be assumed, according to the decision, to have a moral end in view as well as the collection of revenue, but the moral end must be reached through the law only as a revenue measure and within its limits as such. Any other construction would cast grave doubts on the constitutionality of the law. The possession of morphin by a person addicted to its use but not belonging to any of the classes required to register under the law is not forbidden by the law. Therefore, a physician who prescribes such a drug, not in good faith for medicinal purposes but merely for the purpose of putting it into the possession of a person addicted to its use in order that he may gratify his cravings, is not guilty of conspiring to commit an offense against the United States.

If we except the dangerous immunity which Congress has given through the sixth section of the Harrison Narcotic Law to the sale of proprietary nostrums containing opium, morphin, heroin and codein in more or less dilute forms, the federal government has now done and is doing its full duty with respect to the suppression of drug habits, so far as the drugs named in that law are concerned. In pursuance of treaty obligations which the United States not only voluntarily assumed but actually sought out and induced other nations to assume, three statutes have been enacted and are now being enforced, and these seem practically to have exhausted the federal authority under its right to regulate foreign and interstate commerce and to levy taxes But where the power of the federal government leaves off, the power of the state begins, and if the federal government cannot make the possession of opium, morphin, cocain and other forbidden drugs presumptive evidence of possession for an unlawful purpose, unless it can show that the person in possession is required to register and to pay a federal tax, it is quite within the power of the state to enact such legislation as the situation calls for and the public welfare demands As a matter of fact, too, if the defendant in the case just determined, or in any other similar case, did conspire as alleged with persons addicted to the use of morphin so as to put that drug into their possession, and did issue written prescriptions for the drug, merely to satisfy the cravings of the victims of the drug habit, it would clearly appear that an offense was committed against the welfare of the community in which the act was done much more serious than the mere infraction of a revenue law of the United States And the state in which the offense was committed should hardly abandon its right of self-defense and rely for protection on the treaty-making power of the United States, or on the right of the federal government to regulate foreign and interstate commerce and to levy taxes, but should defend itself through its own police power, enacting its own laws and providing its own machinery for their enforcement

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[1] Antinarcotic Law Construed, General News, The Journal A. M. A., June 17, 1916, p. 1933. A New Decision Under the Harrison Act, Current Comment, June 24, 1916, p. 2073.

The state can no longer plead as an excuse for inaction on its part that state laws and regulations are ineffective because of the possibility of obtaining any desired drug through foreign or interstate commerce without state interference, for the federal statutes now regulate such traffic in a reasonably effective manner, and need only active state cooperation to accomplish much more The Harrison Narcotic Law itself recognizes the necessity of state action, and was framed with state cooperation in view Duplicate order forms and prescriptions for habit-forming drugs required by the federal law to be preserved and statements to be filed in the offices of collectors of internal revenue are all by law open to inspection by the state and municipal officials who are charged by law with the enforcement of laws and regulations governing the distribution of the drugs named in the federal act, and certified lists of all persons registered in any collection district can be obtained by such officers on the payment of nominal fees All of the drugs under regulation that come into any state or city can therefore be easily located and traced by the state and municipal officers, and where the federal law fails and must necessarily fail because of constitutional limitations, state and municipal laws and ordinances can and should be applied If the decision of the Supreme Court in the case of *United States* v *Jin Fuey Moy* impels states and cities to action in this respect, it will have served a most useful purpose

SOLDIER'S HEART

To the occupational diseases such as aviator's disease, trench frostbite and trench nephritis[1] associated with the vicissitudes of war, there is added a form of heart trouble to which soldiers are particularly liable, and which has gone under the name of "soldier's heart" or the "irritable heart of soldiers" It is not a new phenomenon, for it appears to have been recognized by American physicians during and after our own Civil War Sir James Mackenzie and others[2] have described what they regard as a definite clinical picture, sharply defined and differentiated The cardinal symptoms are a sense of exhaustion, breathlessness on slight exertion, a rapid pulse which becomes more rapid on the slightest attempt at action, pain over the precardial region or along the left costal margin, and a vasomotor condition of greater or less stability Sometimes nervous symptoms and high blood pressure are added to these Murmurs, systolic in time and heard in different regions, are frequent, while a slight increase in the size of the heart is not uncommon Periods of depression are not unusual, and the patients invalided home are often very irritable

In 1864, during the Civil War, Hartshorne[3] published comparable descriptions of this condition, in which he emphasized the rapidity of the pulse, the acceleration of the heart's movement on the slightest exertion, the shortness of breath, and the cardiac weakness In explanation of the genesis of these symptoms, the prevalence of tight accouterments and overexertion, particularly in the form of setting-up drills, were early suggested The change in accouterment has failed to effect any improvement, and the discontinuance of the particular drills formerly complained of has not put an end to the condition The theorists, therefore, are bankrupt, the disease still remains — these are the words with which one student of the subject has expressed the existing situation

The salient features in the condition known as soldier's heart are not uncommon in civil life They are observed in persons recovering from exhausting illness, such as typhoid fever or influenza, or after a severe surgical operation They are seen in persons who have suffered a long mental and physical strain, particularly with insufficient sleep All of the soldiers give an account of a very strenuous life with attendant exhaustion Sir James Mackenzie contends that most of them give a history which can also safely be surmised to involve an infection According to him the condition is not, properly speaking, cardiac in origin, but is the outcome of an injury to other systems, such as the central nervous system, as well as the heart Mackenzie in particular is inclined on purely clinical grounds to attribute the majority of the cases to bacterial and toxic influences, at any rate he believes that toxic products, whatever their origin, produce changes in the economy — in the blood, the nervous system, and the heart muscle — resulting in an impairment of these structures

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[1] Trench Nephritis, editorial, The Journal A M A, June 24, 1916, p 2070

[2] Discussion on the Soldier's Heart, opened by Sir James Mackenzie Proc Roy Soc Med, London, 1916, ix, Therapeutical and Pharmacological Section, p 27

[3] Hartshorne, H Am Jour Med Sc, 1864, xlviii, 89

Other English physicians who have had an opportunity to study many cases prefer to preserve a more open mind as to etiology All agree, however, that a psychic factor calls for corresponding treatment A cheerful atmosphere confers benefit, whereas a depressing environment exaggerates the condition The psychic condition must be treated before recovery can be expected For this purpose the hospital with pleasant surroundings and suitable opportunities for moderate exercise seems to be the most promising device for the management of the disorder Despite the demonstrated value of mental change, the prognosis is very uncertain for, in the opinion of many of the army physicians, in a large number of cases the heart is permanently damaged

All kinds of trying experiences such as a soldier's life in warfare must be exposed to inevitably puts strains on the heart As Mackenzie has expressed it, this strain invariably finds out the impaired hearts, whether or not the impairment gives rise to physical signs of lesion But the typical "soldier's heart" is a different entity The heart abnormalities are only a feature, though a prominent one, in a general condition in which general exhaustion and a sense of its existence are the dominating characteristics Doubtless both the nervous and muscular systems are involved

QUARTERLY CUMULATIVE INDEX TO CURRENT MEDICAL LITERATURE

With the increasing amount of medical literature it has become more difficult, yet more necessary, for physicians to keep abreast of medical progress At present there is no index which makes current medical literature accessible under a single alphabetical arrangement The index[1] which has been issued each six months with The Journal is good so far as it goes, but it is not as inclusive as many desire, and the arrangement is not altogether satisfactory, since a reference to The Journal is necessary

There are at the present time two other indexes to medical literature, one, the *Index Medicus*, published by the Carnegie Institution of Washington, D C It is so elaborate and so inclusive that it is of practical value to few but research workers It is never up to date, the last references available in it are for 1914, unless each individual issue is consulted The index to the 1915 volume is not yet out, the index to each volume is usually issued about August of the following year Even with the index one must turn to the body of the book to find a reference, thus making it necessary to look in two places The other index is the *Index Catalogue of the Library of the Surgeon-General's Office U S Army* This is a most valuable reference work, but its method of issuance is such that it cannot represent *current* literature The letter A of the present series was published in 1896, and B in 1897 It has now reached W, which letter is not complete Matter under the last initial is more or less up to date, but the literature under the previous initials is out of date and valuable only for research purposes As a matter of fact, the existing indexes leave much to be desired

It has been decided to issue an index on what is known as the "cumulative plan" which, while new in medical indexing, is not new in the indexing of general literature In the cumulative plan each issue includes all that has appeared in previous issues of the year, the final issue being an index to the literature of the past twelve months

The *Quarterly Cumulative Index to Current Medical Literature*[2] will be issued the middle of April, July, October and January The April issue, already out, indexes the journals received during January, February and March, the July issue will contain in one alphabetical sequence all that appeared in the April issue, with the addition of references to journals received during April, May and June Thus the July issue will supersede the April issue, and similarly the October issue will supersede the July issue Each quarterly issue will contain a complete index of the literature of the year up to the first day of the month of issue The January issue will be a complete index to the literature of the preceding year, and will be bound in cloth for permanent preservation

POSTGRADUATE WORK AT HOME

Many physicians, for financial reasons, or from the nature of their practice or location, find it impossible to leave their homes to take postgraduate work Many of these would be glad to add to their knowledge of modern diagnostic methods and to improve their skill if such instruction could be made accessible to them

Efforts to meet this need are now being made in several states The Medical Society of the State of Pennsylvania, so far as we know, was the first state association to establish graduate instruction in county societies Many physicians well qualified as teachers were found who were willing to conduct clinics and discuss medical topics before county societies if their traveling expenses were paid This plan was quite successful for a number of years, and that success would doubtless have been continued if adequate supervision of it had been maintained by the state society

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[1] Hereafter the index published in The Journal at the conclusion of each volume will contain references only to material in The Journal including abstracts of articles in the Current Medical Literature department but not references to titles The index to The Journal will be more complete in that each subject entry will be followed by the name of the author in brackets and in the author index each name will be followed by a brief clue to the subject of the article The Guide to Current Medical Literature will be discontinued with the present issue

[2] See advertising pages 10 and 11 of this issue

Another plan was adopted about two years ago by the Committee on Post-Graduate Instruction of the Medical and Chirurgical Faculty of Maryland Among the younger faculty members in the local medical schools, a number of men well qualified to give graduate instruction were found who could be spared from their duties at certain periods of the year The offer was made to send one or two of these men to give courses of lectures and clinics to county societies desiring them, the only charge made being for traveling expenses Last year the plan was tried at Hagerstown, and so much interest was aroused that this year the state committee expects to establish ten or twelve such courses This year it is planned also to have the teachers make use of afternoon hours by giving individual instruction in diagnostic methods, auscultation, percussion and similar subjects

In Michigan during the past year the development of a public health measure has resulted in bringing graduate medical instruction to the local physicians The state board of health established clinics throughout the state for the examination of patients suspected of having tuberculosis Specially qualified clinicians have been selected by the board to have these clinics in charge, who, in addition to examining the patients and instructing them how to live, demonstrate to local physicians the later and more efficient methods of examination and diagnosis In Ohio the Committee on Medical Education of the state medical association has adopted a plan somewhat similar to the one in Maryland whereby teachers from the local medical schools have consented to give lectures and demonstrations on special subjects to physicians in the small cities and towns of that state

Another plan explained in greater detail on another page[1] is being tried in North Carolina by the state board of health and the state university A Boston physician has been engaged to make a weekly circuit of six cities in the eastern part of North Carolina for seventeen weeks and to give a series of clinical lectures and demonstrations A Chicago physician is conducting a similar class in the western part of the state Classes have been arranged in these cities, and fees are charged sufficient to pay the traveling expenses and to provide a nominal remuneration for the instructor The courses are on diseases of children, in connection with which, it is stated, special attention is to be given to the latest methods of infant feeding and laboratory methods of diagnosis If these courses are successful, classes in other subjects will doubtless be established not only in North Carolina but in other states also

By these several schemes, therefore, a field of endeavor has been opened which is worthy of being widely extended In this way physicians who otherwise cannot secure graduate instruction will be enabled to do so, and thus render better service to their patients

Current Comment

THE ARMY MEDICAL SERVICE AS A CAREER AN OPPORTUNITY

The glamor of military preparedness from a national point of view should not be allowed to obscure the fact that from the standpoint of the individual there has never been so good an opportunity as at present for the physician who desires to enter as a career the medical corps of the army For competent men there is the certainty of immediate appointment, and the chances of rapid promotion are all that any reasonable person could wish Through the operation of the recently enacted army reorganization law there are now more than 100 vacancies to be filled, and as the annual increases for which the law provides are made from year to year within the next five years, the men now appointed, if they have proved their fitness for the service, will be rapidly advanced to higher grades If the president, without waiting for the expiration of the stated annual periods fixed by the act, should exercise the right given him in event of actual or threatened war or similar emergency to organize the entire increase authorized by the law, or any part thereof, that he might deem necessary in addition to the one fifth that he is required to organize annually, appointments in the near future will be even more numerous and promotions more rapid Of course the tenseness of our international relations and a natural spirit of resentment for the unprovoked destruction of American lives tend just now to drive every man possessed of any good red blood toward the military arm of our government, and a physician inclines naturally toward service in the medical corps But leaving all that aside and looking on the service as offering a career in time of peace as well as in time of war or threatened war, it will be found to invite as do few other fields of medical endeavor It offers a more than fair living wage, under most congenial conditions, a wage and condition that are certainly superior to those pertaining to the average medical practice To the physician of a scientific turn, its opportunity for rational practice along strictly scientific lines presents an almost irresistible appeal Opportunities for study and research in favorable environments are numerous, and officers are encouraged to avail themselves of them The sacrifice of personal liberty of action which the officer must make for the efficient operation of the service is hardly any greater, if as great, as the surrender of his own independence that all successful practitioners, and many unsuccessful ones, make to the whims and caprices of their patients While the foregoing applies to the army, it must not be forgotten that the navy also offers opportunity to physicians, but of different kind Applicants who successfully pass examinations attend the course of instruction at the Naval Medical School, during which time they receive a substantial salary At the end of this course, if successful, they are commissioned as assistant surgeons in the navy A review of recent advances in medical science — particularly in the field of hygiene — indicates that many of the most significant discoveries have been the result of research conducted by officers of the U S Army and Navy Medical Corps The work is not, as many imagine, a dry routine Exceptional opportunity is offered for independent observation and research The man of an investigative turn of mind need not be lost as a mere unit in a government bureau, but may express his personality and receive the reward of his personal endeavor[1]

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[1] Graduate Medical Classes in North Carolina, The Journal A M A, this issue, p 66

TECHNICALLY GUILTY—MORALLY JUSTIFIED

A little after 10 p m Thursday, June 22, and after being out nearly a week, the jury in the Wine of Cardui case brought in a verdict for the plaintiff and assessed the damages at 1 cent The Chattanooga Medicine Company charged the American Medical Association with having libeled it when THE JOURNAL declared, among other things that the business had been built on deceit, and that Wine of Cardui was a vicious fraud For this alleged libel it asked that it be given $100,000 00, it was given $0 01 As most of our readers remember, two suits were originally brought against the Association and the Editor of THE JOURNAL One was a personal suit for $200,000, brought by John A Patten, formerly chief owner of the Chattanooga Medicine Company, the other was a partnership suit for $100,000 brought by John A Patten and his brother, Z C Patten, Jr, doing business as the Chattanooga Medicine Company The suits were based on two articles that appeared in THE JOURNAL, April 11, 1914, and July 18, 1914, respectively The cases came to trial March 21, 1916 On April 26, in the middle of the trial, John A Patten died, and the personal suit was automatically abated The partnership suit, however, was continued and this case went to the jury Friday, June 16 The case is by far the most important of its kind that has ever been tried In addition to 498 depositions which the "patent medicine" concern took through the South from women and from doctors of a certain type, the company also put 97 witnesses on the stand to testify in its behalf The American Medical Association took only 8 depositions but did put on the stand 93 witnesses, among whom were some of the best known physicians in the country The trial and the facts that led up to it could furnish texts for many interesting comments The spectacle of a scientific organization, in its attempt to safeguard the public health having to assume responsibilities that rightly belong to state or federal agencies, is but one of several anomalies that characterize this case Viewing all the facts in the case and remembering the heavy damages asked by the plaintiff, the medical profession may interpret the verdict thus Technically guilty, morally justified! To the Association a moral triumph, to the "patent medicine" interests a Pyrrhic victory

AN INCIDENT IN THE WINE OF CARDUI CASE

Several physicians from the South have testified as witnesses for the American Medical Association in the Wine of Cardui case In many instances, necessarily, the evidence dealt with the case-histories of certain patients In order to protect these patients from any publicity, the physicians who testified specially requested that the names of the patients need not be given in open court To this the Court agreed, holding that the names should be given in confidence to the lawyers for the manufacturers of Wine of Cardui Soon after some of these Southern physicians reached home they reported that statements had been made by strangers to some of these women and their relatives that their names had been made public and serious reflections had been made upon their reputations in court The natural result of these statements, by whomsoever circulated, has been to create local prejudice against the physicians who testified Some of these physicians declare that they have been in danger of bodily violence and have been put in a false and unenviable light in their communities The Court, on having this matter brought to his attention, made a statement[1] relative to it which becomes part of the record of the case

FOURTH OF JULY ANTICIPATION

Before our next issue another Fourth of July will have passed How will it be celebrated? Has the Mexican crisis created a deeper and more sincere patriotism than that usually shown by the din and destruction from fireworks? Will there be a retrogression in the methods of celebration, or are the saner methods to prevail? Will the result of the celebration this year show a continuation of the more rational methods of the last two or three years? We hope that it will Last year the injuries numbered 1,165, including deaths, only one of which was from lockjaw This was in marked contrast to conditions in 1903, when there were 4,449 injured, including 466 killed, with 406 deaths from lockjaw It is too much to hope that the old method of celebration has been entirely uprooted, some injuries from the use of fireworks next Tuesday are bound to occur It is worth while, therefore, to repeat the suggestions printed in previous years for prophylaxis against tetanus and for the treatment of Fourth of July injuries

1 Carefully and thoroughly remove every particle of foreign matter from the wound, laying it open, an anesthetic should be given if necessary

2 Dry the wound thoroughly, and paint it and the surrounding parts as carefully as possible with iodin, or else cauterize it thoroughly with a 25 per cent solution of phenol (carbolic acid) in glycerin or alcohol

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[1] Preliminary examinations for appointments to the Army Medical Service will be held July 17 and August 14 Information as to details can be obtained by addressing the Surgeon General of the Army Washington D C. The next examination for appointments in the medical corps of the navy will be held August 7 at several different places Full information regarding the physical and professional examinations with instruction as to the proper method of submitting formal application may be obtained by addressing the Surgeon General of the Navy Navy Department Washington D C

[1] See page [illegible]1

3 Apply a loose wet pack, using a solution of some such antiseptic substance as boric acid or alcohol

4 As soon as possible inject intravenously or subcutaneously 1,500 units of antitetanic serum and continue the injections if indications of possible tetanus arise

5 In no case close the wound Allow it to heal by granulation Remove the dressings and packing each day and apply fresh ones

PREPAREDNESS

If war comes — and certainly it does not seem far oft — physicians of the United States will be called on in far greater numbers than can be secured from the regular army, the militia, and the medical reserve corps In England, France, Germany, and in other warring European nations, the war was but a few weeks old when an appeal went out to civilian physicians In all countries the response was as hearty and complete as might be expected from members of the medical profession While it seems improbable that such an urgency will develop in this country, nevertheless it may The government may rest assured that when needed members of our profession will be ready Physicians who feel that they will respond should inform themselves as to the duties that will devolve on them During the last few years The Journal has published many articles on military medicine These may be found by a reference to the index numbers of The Journal A few months ago The Journal published[1] a series of articles which will be found helpful

QUO WARRANTO PROCEEDINGS AGAINST THE ASSOCIATION

On June 27 the state s attorney of Cook County, Illinois, acting under mandamus issued by the courts, commenced *quo warranto* proceedings against the American Medical Association and its trustees The action concerns the right, under the Illinois law, of a "corporation not for profit" to elect its officers at meetings held outside of the state of Illinois, and to hold such elections through delegates instead of by a vote of the individual members As our readers know, this matter has been in the courts some five and one-half years But the various procedures have been so wrapped up in legal technicalities that it is impossible to make a clear statement without taking too much space Suffice it to say that this action brings the American Medical Association into the case for the first time As this suit was entered just as we go to press and the papers have not yet been served, a further statement cannot be made at this time It should be added that the question at issue is one that concerns all societies and organizations chartered under that part of the Illinois law which provides for "corporations not for profit"

Preparation for Writing —When a man writes from his own mind, he writes very rapidly The greater part of a writer's time is spent in reading in order to write, a man will turn over half a library to make one book —Samuel Johnson

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest, such as relate to society activities, new hospitals, education, public health, etc)

CALIFORNIA

New Hospital Building —Leland Stanford Junior University is planning to erect a new hospital during the present summer at a cost of $500,000

New Medical Scholarship —Another scholarship, amounting to $400 per annum, to be known as the William Watt Kerr scholarship, has been established at the University of California by the medical alumni of that institution

To Wipe Out Hookworm —The state board of health announces that it will hereafter issue hookworm certificates to all miners examined whether free, cured or suffering It is said that 50 per cent of the men working in the mines in California are infected with the disease

Alumni Election —At the annual meeting of the Alumni Association of the College of Physicians and Surgeons of San Francisco, May 31, the following officers were elected president, Dr Frederick C Keck, vice presidents, Drs Will P Schwarz and Gabriel J Vischi, secretary, Dr Charles M Troppmann, and treasurer, Dr Philip S Haley

ILLINOIS

Medical Aid for University Students —Northwestern University will provide daily consultation and free treatment for its students Dr Virgil E Dudman has been appointed health officer

Banquet for New State President —Dr Elmer B Cooley, Danville, president-elect of the Illinois State Medical Society, was the guest of honor at a banquet given by the Vermilion County Medical Society at the Plaza Hotel, Danville, June 19

Picnic and Medical Meeting —Physicians of the state are invited to attend the three-day picnic of the Illinois State Medical Society at Starved Rock, Ill, July 12 to 14, as guests of the doctors of northern Illinois The committee in charge has provided excellent entertainment, including an address by Dr William Seaman Bainbridge, New York, outdoor sports, hikes, river excursions and a visit to the Ottawa Tuberculosis colony

Chicago

Women Doctors Elect —At the annual meeting of the Medical Women's Club of Chicago, June 21, Dr Clara Ferguson was elected president, Drs Lillian E Taylor and Marie S Schmidt, vice presidents, Dr Rachel A Watkins, secretary, Dr Ione F Beem, treasurer, and Dr Sadie Bay Adair, editor of the bulletin

Baby Week —Baby Week, conducted under the auspices of the health department, ended June 23, and during the week more than 300 addresses were delivered to children in public schools and many talks were made from automobiles to street corner crowds The 200 physicians and 100 nurses who took part in this work traversed the entire city preaching the gospel of the proper care of babies and distributing the health department's book on this subject

Annual Meeting of Chicago Medical Society —At the annual election of the Chicago Medical Society, June 20, the following officers were elected president-elect, Dr Charles E Humiston, president, Dr A Augustus O'Neill, and secretary, Dr John V Fowler On the following evening these officers were installed at a reception given in the Auditorium Hotel, at which Dr Elmer B Cooley, Danville, the president-elect of the Illinois State Medical Society, was the guest of honor The reception was followed by a banquet and dance

Memorial to Distinguished Sanitarian —A memorial service to the late Dr Frank W Reilly, for many years assistant commissioner of health of Chicago, and at one time secretary of the Illinois State Board of Health, was held June 21, when the Frank W Reilly Public School at School Street and Lawndale Avenue was dedicated The principal addresses were delivered by Superintendent of Schools John D Shoop, President Jacob M Loeb of the Board of Education, Dr Arthur R Reynolds, former health commissioner, and Dr Alfred C Cotton, who paid high tribute to the memory of Dr Reilly

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[1] A pamphlet entitled "What the Civilian Doctor Called to Active Service Should Know," reprinted from The Journal, Feb 5, 12 and 19, 1915, will be sent on receipt of a request accompanied by a two cent stamp

Banquet to Prof Walter S Haines—The annual banquet of the faculty and alumni of Rush Medical College, held Saturday, June 17, was a testimonial to Prof Walter S Haines in recognition of forty years of service as teacher of materia medica and chemistry at the college A portrait of Dr Haines, paid for by individual subscription from 1 100 alumni, was presented to the college by Dr William T Belfield and accepted by Dr Frank Billings A short address was made by Professor Haines More than 400 alumni were present At the annual meeting of the alumni association the following officers were elected president, Dr John E Rhodes, treasurer, Dr Elmer L Kenyon, and secretary, Dr Charles A Parker

Personal—At the annual convocation of the University of Wisconsin, June 21, the degree of Doctor of Science was conferred on Dr Ludvig Hektoen——Dr Frederick Tice is convalescing at the Washington Boulevard Hospital after an operation for gallstones——Dr Philip S Chancellor has returned from Santa Barbara to join Field Hospital No 1, Illinois National Guard, in Springfield Dr Chancellor recently returned from service with the Chicago unit in France where he was mentioned in dispatches on account of efficient service——Capt Daniel W Rogers has been appointed major, Lieut Eugene G Chaney has been promoted to captain and Dr Thomas M Egan has been appointed first lieutenant, medical corps, all being assigned to the Seventh Infantry——Drs John G O Malley and Frederick C Jacobs have returned after service in a British base hospital in France——Drs Jacob T Minke Harry C Rolmel and six nurses have arrived in Berlin to take service in German base hospitals

INDIANA

Personal—Dr Moses A Rush, Anderson, who has been seriously ill for several weeks as the result of a cerebral hemorrhage, is reported to be improving——Dr Brown S McClintic, Peru, is on duty with the Russian army in Persia

National Guard Changes—Maj Frank W Foxworthy, Medical Corps Indianapolis, has been appointed chief surgeon of the Indiana National Guard, Maj Larue D Carter has been assigned to command Field Hospital No 1, and Drs Burton A Thompson, Kokomo, Leonard J Ostrowski Indiana Harbor, Clint C Sourwine, Brazil, and Leonard P Collins, Winamac after a physical mental and professional examination, have been appointed lieutenants in the medical corps

MARYLAND

Personal—Dr Elizabeth Hurdon Baltimore sailed June 28 from New York for England for an indefinite stay——Prof William H Welch received the degree of Doctor of Laws at the spring convocation of the University of Chicago——Dr Edward L Whitney, professor of physiologic chemistry pharmacology and clinical pathology in the University of Maryland, has resigned to take up practice in Portland, Ore

Johns Hopkins Hospital Given $93,000—For the purpose of enlarging the Phipps Tuberculosis Dispensary and adding facilities for diagnosis and treatment $7 500, and $17 500 as an annuity for five years for supporting a research fund have been given the Johns Hopkins Hospital by Mr Kenneth Dows of New York Dr Allen K Krause at present connected with the Saranac Lake (N Y) laboratories, will come to Baltimore and with a special staff will assume charge of the work in the Phipps laboratories The donor s aim is to create facilities for more adequate and thorough research work It is also planned to afford better instruction for physicians specializing in the treatment of tuberculosis along the lines of recognition and management of the disease The work of the newly organized department will be centralized in the laboratory In the clinic, Dr Krause s staff will consist of Dr C R Austrian, now in charge of the dispensary, Drs Edward V Coolahan Isadore Hirschman, Mary A Hodge, Martin F Sloan, John Girdwood and Hiram Fried During the summer months Dr Krause will return to his work at Saranac Lake, thus binding together the Trudeau School of Tuberculosis and the Johns Hopkins Hospital

NEW JERSEY

Personal—At the fifty-fifth annual commencement exercises of Washington University St Louis, June 8 the honorary degree of LL D was conferred on Dr Theobald Smith, Princeton, N J, who is connected with the Rockefeller Institute for Medical Research

Society One Hundred and Fifty Years Old—The one hundred and fiftieth annual meeting of the Medical Society of New Jersey was held at Asbury Park, June 19 to 22, under the presidency of Dr William J Chandler, South Orange The following officers were elected president, Dr Philip Marvel Atlantic City, vice presidents, Drs William G Schauffler, Lakewood, Thomas W Harvey, Orange, and Gordon K Dickinson, Jersey City, secretary, Dr Thomas N Gray, East Orange (reelected), and treasurer, Dr Archibald Mercer, Newark (reelected) The oration in medicine was delivered by Dr Martin H Fischer of the University of Cincinnati on "Classification, Prognosis and Treatment in the Nephritides" At the anniversary dinner, held June 21, at the Monterey Hotel the speakers were Dr Hobart A Hare of the University of Pennsylvania, Philadelphia, and former Attorney General Robert H McCarter, Newark The morning session of the last day was devoted to centennial exercises for Essex Middlesex, Monmouth, Morris and Somerset county medical societies The society has always held the get-together spirit in its annual meetings as most important and special interest has been manifested in the work of the house of delegates At the last meeting, the committee on standardization of hospitals, which was appointed in 1914 made its report This committee had made a personal investigation of every hospital in the state during 1914-1915 and during the last year has studied the data obtained during these investigations and formulated a minimum standard for hospitals The report was unanimously adopted by the house of delegates and the State Board of Medical Examiners at that time in session in Trenton, was advised of this action Later it was announced to the house of delegates that the state board had adopted the society's findings as to minimum standards for hospitals This society is unique among medical societies in the large number of members who bring their wives and families to the meetings Among the visitors from outside the state were Drs George I McKelway of Delaware, C B Earle of South Carolina, Martin B Tinker of New York, John R Brown of Washington Edward Y Davidson of the District of Columbia and George M Palmer of Massachusetts The Medical Society of the State of Pennsylvania paid a splendid tribute to the society by sending a delegation of about fifty, representing in addition the medical institutions of the state and the board of health of Philadelphia Nearly 800 were in attendance, of this about one half represented membership In the seventy-seven years from 1835 to 1912, the society has had but three recording secretaries, two of whom, the Drs William Pierson father and son, served thirty-one years each, and Dr William J Chandler fifteen years Dr James English served as treasurer for thirty-three years and this year the society recognized the twenty-five years of service as treasurer of Dr Archibald Mercer by presenting him with a massive silver loving cup at the annual banquet The original book of minutes of this society, in good preservation, is still in its possession In the century and a half since its organization the membership has increased from sixteen who responded to the roll call on the day of its organization to over 1,600 physicians whose names now appear on its roster In anticipation of the one hundred and fiftieth anniversary the June issue of the *Journal of the Medical Society of the State of New Jersey* was a special issue devoted largely to recording the history of the physicians who have taken a prominent part in the profession of the state, and in announcing the program for the annual session

NEW YORK

Visit Memorial Hospital—Forty of the employees of the Bureau of Hygiene of the Buffalo Department of Health headed by Dr Arthur C Schaefer, assistant commissioner of health went to Perrysburg June 10, to study methods in the J N Adam Memorial Hospital——A second party headed by Arthur W Kreinheder visited the hospital earlier in the day to make investigations with a view to increasing the facilities at the institution

Immunizing New York Guardsmen Against Typhoid—According to Commissioner Biggs of the state department of health enough vaccine was shipped from the laboratories of the department on June 22 to immunize 4 000 guardsmen Enough vaccine is on hand to immunize the entire national guard recruited up to war strength Anticipating such a demand, the division of laboratories of the department has been working overtime for several months

New York City

College Requirements Raised—Beginning with September, 1918, the University and Bellevue Hospital Medical College will require two years of college work before admission By arrangement with the academic department of New York University, it will now be possible for a student after six years and a half to obtain the combined degree of bachelor of science and doctor of medicine ——Dr Samuel A Brown, assistant professor of medicine, has been made dean of the medical school

Memorial Gift to Mount Sinai Hospital—It has been announced that the Guggenheim brothers have given $165,000 to Mount Sinai Hospital as a supplement to previous gifts totaling $500,000 donated as a memorial to their parents The gift was originally intended to build a private pavilion with a capacity of eighty beds The recent demands for private rooms has been so great that it has been shown that the contemplated building would have been far from adequate The additional donation will provide for the erection of a pavilion having accommodations for 125 patients The new building will be seven stories in height, and will have a frontage of 200 feet on Fifth Avenue overlooking Central Park

Hospital Liability Ceases with Death—Recently a certain Mrs Hasselbach sued Mount Sinai Hospital for damages because of a necropsy performed on the body of her husband, but she did not allege that those performing the necropsy were under control of the hospital authorities In reversing an order of the Supreme Court sustaining a demurrer to the separate defense of the defendant in this suit, the Appellate Division unanimously decided that a benevolent or charitable corporation maintaining a hospital wherein a patient dies after an operation, is not under absolute duty to the wife of such a patient to protect her husband's body against a necropsy by any person whomsoever and to deliver said body in the same condition that it was immediately after death

Infantile Paralysis—The officials in charge of the investigation of the infantile paralysis outbreak in Brooklyn announce that four additional true cases and ten new suspected cases have been found and they therefore believe that the outbreak is not spreading and that conditions will soon return to normal Thus far 114 cases have been reported, with three deaths The acting health commissioner, Dr John S Billings, Jr, has sent 2,500 circular letters to the physicians of Brooklyn calling attention to this outbreak and asking the cooperation of all practicing physicians in preventing the spread of the present focus of infection, and to the fact that in doubtful cases examination of the cerebrospinal fluid often affords valuable aid The department is ready to undertake the examination of the spinal fluids and to make the lumbar puncture if requested In 1907, this city suffered an extensive outbreak of poliomyelitis, there being over 2,500 cases, and little was known with reference to the control of the disease The department of health now requires a minimum period of quarantine of six weeks, and also insists in the exclusion from school of other children in the same family Since there is good reason to believe that the disease is spread through infected nasal discharges, the department insists on precautions similar to those in diphtheria

OHIO

Honor Dr Means—The faculty of the Ohio Medical University held a banquet in Columbus, June 19, in honor of Dr William J Means, dean of the faculty, who resigned recently after a quarter of a century of active service for the institution

Honor to Zinke—Dr E Gustav Zinke, Cincinnati, was the guest of honor at a dinner given by 125 physicians and friends at the Hotel Gibson, Cincinnati, June 19, on the occasion of his retirement after twenty years' service as professor of obstetrics at the Medical College of Ohio Dr Charles L Bonifield was toastmaster, and Dr Zinke was presented with a silver loving cup

Personal—It is reported that Dr William Gillespie is to succeed Dr E Gustav Zinke as professor of obstetrics at the Ohio-Miami Medical College ——Dr Booker Lee has resigned from the staff of the Massillon State Hospital and will practice in Richmond, Va ——Dr Thomas J Calkins, Cleveland, was given the honorary degree of Master of Arts by Fordham College, New York, June 15 ——Dr Harry R Wahl, associate in pathology in Western Reserve University, Cleveland, has been elected director of laboratories in the new Mt Sinai Hospital

Degree to Prof John Uri Lloyd—At the annual commencement of the University of Cincinnati, June 10, the honorary degree of Doctor of Science was conferred on Prof John Uri Lloyd, Cincinnati, author, chemist, humanitarian and philanthropist Professor Lloyd is also widely known as a literary student of the folklore of northern Kentucky He is the founder of the Lloyd Library, the most completely equipped pharmaceutical library in this country His contributions to the chemistry of colloids and his researches in the chemistry of medicinal plants are many and valuable

Alumni Meeting—The meeting of the Alumni Association of Western Reserve University, Medical Department, was held, June 8 to 10, at Cleveland with about 400 in attendance A series of clinics and demonstrations for three days was held in the various hospitals and the medical school Dr John B Deaver, Philadelphia, delivered the annual address and held a general clinic at the City Hospital, and the following officers were elected president, Dr George E Follansbee, Cleveland, vice presidents, Drs Charles Griefe and John M Firmin, Findlay, secretary, Dr Clyde L Cummer, Cleveland, and treasurer, Dr Harvey A Berkes, Cleveland President Charles F Thwing accepted, on behalf of the university, portraits of Dr Gustave C E Weber, former professor of surgery, and Dr Hunter H Powell, former professor of obstetrics and diseases of women in the Medical College, the presentation on behalf of the Alumni Association being made by Drs William T Corlett and Arthur H Ball respectively

Faculty Changes—The following changes are announced in the faculty of the Western Reserve University, Medical School Dr Edward Perkins Carter promoted to associate professor of medicine, Dr Louis Williams Ladd promoted to associate professor of clinical necroscopy in the Leonard Hanna Foundation, Dr William Bricker Chamberlin promoted to associate professor of otology, rhinology and laryngology, Dr Harold Newton Cole promoted to associate professor of dermatology, Dr Gaius Elijah Harmon promoted to senior instructor in hygiene, Dr Bradley Merrill Patten promoted to senior instructor in histology and embryology, Dr Percy Wells Cobb promoted to instructor in physiology, Dr Edward Patrick Monaghan promoted to instructor in gynecology, Dr Roy Bartlett Metz promoted to instructor in ophthalmology, Dr Leo Wolfenstein promoted to instructor in ophthalmology Dr John George Spenzer was voted a seat and vote in the medical faculty as representative of the former faculty of the medical department of Ohio-Wesleyan University, and Dr Arthur Bradley Eisenbrey New York, was appointed associate in pathology

OKLAHOMA

Personal—Dr John Reynolds, Muskogee, has been appointed city health officer, and Dr James G Rafter, Muskogee, has been made physician of Muskogee County ——Dr John W Duke, state commissioner of health, Guthrie, has been requested by the surgeon-general, U S P H S, to taken up the investigation of the number of cases of pemphigus in the United States

State Association Meeting—At the twenty-fourth annual meeting of the Oklahoma State Medical Association, held at Oklahoma City, Medicine Park was selected as the place of meeting for 1917, and the following officers were elected president, Dr Charles R Hume, Anadarko, president elect, Dr W Albert Cook, Tulsa, and vice presidents, Drs G Fowler Border, Mangum, Arthur R Lewis, Ryan, and Horace Reed, Oklahoma City

OREGON

Alumni Election—At the forty-first annual meeting of the Alumni Association of the Medical Department of the University of Oregon, held in Portland, June 7, the following officers were elected president, Dr David H Rand, Portland, vice presidents, Drs Banner R Brooke, Portland, Louis Buck, Portland, Kittie Plummer Gray, Portland, and Mark W McKinney, Seattle, Wash, secretary, Dr Adalbert G Bettman, Portland, and treasurer, Dr Katherine C Manion, Portland The name of the association was changed to the Alumni Association of the Medical School of the University of Oregon, to conform to the change in the name of the institution

PENNSYLVANIA

Druggists Fight "Patent Medicine" Vendors—The Pennsylvania druggists, at their annual meeting in Reading during the week of June 20, enacted resolutions with a view of prohibiting or curtailing the sale of "patent medicines" in this state At the last meeting of the legislature the bill was introduced to control this business and was defeated by a small majority The druggists believe therefore that they can pass such a measure this year because the public better understands the evil of "patent medicine" frauds

Personal—Dr and Mrs Frank P Lenahan, Wilkes Barre, have moved to San Diego, Calif——Dr Richard G Burns is in charge of the Pittsburgh Tuberculosis Hospital——Dr J Stuart Lawrance, Greensburg, has been appointed obstetrician to St Mary s Hospital, Philadelphia——Dr Theodore L Hazlett, Pittsburgh, who has been serving with the Russian army for a year and a half, is reported ill with typhus fever——Dr William J Crookston, Pittsburgh, is home from Budapest, where he has been connected with the American Red Cross Hospital since December, 1914

Philadelphia

Personal—Dr Charles K Mills was given the honorary degree of Doctor of Laws by the University of Pennsylvania at the annual commencement exercises, June 20——Dr S Lewis Ziegler was elected a member of the board of trustees of Bucknell University at the annual meeting June 20——Dr John Wanamaker, III, has been appointed surgeon at the *central station*

Phipps Institute to Close Branches—The hospital of the Henry Phipps Institute for the study, treatment and prevention of tuberculosis is to be partially closed "The factory experiment," an extensive branch of sociologic work providing an industrial occupation for tuberculous patients, will be closed at the end of the fiscal year, June 30 It is said the hospital itself will only be closed for a very short period The sociologic department, however, with the dispensary and the pathologic laboratory, will continue in operation

CANADA

Compulsory Military Training at McGill—McGill University, Montreal, recently adopted the following resolution 'That in view of the gravity of the present situation military training shall be compulsory (for the duration of the war and while the university is without a gymnasium) during the first three years of his course for every British male student of the university who is declared fit by the medical officer"

Personal—Dr Casimir C Fissette, Brantford, Ont, has received an appointment to the R A M C, and leaves shortly to take up his duties in a base hospital——Dr J A Boyd, Guelph, Ont, has been appointed medical superintendent of the Kingston General Hospital, in succession to Dr Morris F Coglon, who retires July 1——Dr John Hicks, assistant superintendent of the Brandon (Manitoba) Hospital for Mental Diseases, has been appointed superintendent to succeed Dr John J McFadden

Hospital News—A by-law is to be submitted to the people of Brantford, Ont, to provide $58,000 to pay off the debt on the new hospital building The City Council has voted $7 000 for this purpose——A hospital for the treatment of soldiers who have been "gassed" is to be built near the Mountain Sanatorium at Hamilton, Ont The building will be provided by the Hamilton Health Association, and the Daughters of the Empire will be responsible for the maintenance of it——More than $41 000 was recently collected in Toronto for the new Women's Hospital It is expected $120 000 will be raised——A Home for Incurables is to be opened at Longue Pointe, Quebec——From the Montreal theater tax the Montreal General Hospital, Royal Victoria, Hotel Dieu, Western and Notre Dame will receive about $30,000, the special hospitals will receive $20,000 and other institutions $10,000——There has recently been collected in Montreal a sum of $60 000 to pay off the debt of the Western Hospital in that city——A nurses' home is to be built in connection with the Calgary Hospital——The Calgary Hospitals Board will provide additional accommodation for cases of infectious diseases, this is owing to the prevalence of diphtheria in Calgary during the past few weeks

GENERAL

Prevention of Hay Fever—At the annual meeting of the American Hay-Fever-Prevention Association, held in New Orleans June 15, the following physicians were elected to office Dr William Scheppegrell, New Orleans, president, and Surgeon General Rupert Blue, U S P H S, vice president

Medical Alumni Organize—At the annual meeting of the Medical Association of the Alumni of the University of Virginia Charlottesville, the following officers were elected president, Dr Hugh H Young Baltimore, vice president, Dr Fielding L Taylor, New York, and secretary treasurer, Dr Thomas V Williamson, Norfolk, Va

Academicians Elect New Officers—At the annual meeting of the American Academy of Medicine, held in Detroit, June 12, the following officers were elected president elect, Dr Jacob E Tuckerman, Cleveland, vice presidents, Drs Frederick L Van Sickle, Olyphant, Pa, and Ray Connor, Detroit, and secretary, Dr Thomas W Grayson, Pittsburgh

Industrial Physicians Organize—More than one hundred physicians engaged in work for great corporations met at Detroit June 12 and organized the American Association of Industrial Physicians and Surgeons, electing the following officers president, Surgeon Joseph W Schereschewsky, U S P H S, Pittsburgh, vice presidents, Drs Francis D Patterson, Philadelphia, and Robert T Legge, Berkeley, Calif, and secretary treasurer, Dr Harry E Mock, Chicago

Result of Safety-First Campaign—The safety revolution in business America has resulted, since 1913, in a reduction of accidents in the American Locomotive Company, Schenectady plant, of 62 per cent, in the Eastman Kodak Camera Company of Rochester, N Y, of 51 per cent, Stromberg-Carlson Telephone Manufacturing Company, 40 per cent, New York Edison Company, 38 per cent, Lackawanna Steel Company, 44 per cent, General Electric Company, 34 per cent, and the United States Steel Corporation, between 1906 and 1914, of 43 54 per cent

Will Study Source of Tropical Diseases—A commission constituted by the International Health Board of the Rockefeller Foundation sailed on the *Almirante*, June 14, on a trip to various points of South America where yellow fever is still reported to exist The commission is headed by Maj Gen William C Gorgas, U S Army, who has obtained four months' leave of absence for this purpose, and the other members are Asst Surg Gen Henry R Carter, U S P H S, clinician, Dr Juan Guiteras, head of the Public Health Service of Cuba clinician and general adviser, Maj Theodore C Lyster, M C U S Army, clinician, Maj Eugene R Whitmore, M C, U S Army, pathologist, Sanitary Engineer William D Wrightson, U S P H S, sanitary engineer, and Harry H Wakefield, secretary The commission will go first to Caracas, Venezuela, and then to Colon, and after crossing the Isthmus will proceed down the western coast of South America, stopping at Guayaquil, Ecuador, and Manaos, Pernambuco, and Bahia, Brazil The official announcement states that this commission "will now make surveys of the infected regions for the purpose of determining the doubtful endemic centers and of ascertaining what measures may be necessary and feasible for the eradication of the infections in those communities on which the responsibility for the presence and spread of yellow fever is found to rest"

Another School of Hygiene and Public Health—The Rockefeller Foundation reports that funds have been provided for the establishing of a school of hygiene and public health in Baltimore, in connection with Johns Hopkins University Dr William H Welch has been appointed as director of the school and Dr William H Howell as head of the physiologic department A site is to be purchased and a suitable building erected, provided with laboratories and departments needed in such a school, including those of sanitary chemistry, physiology, bacteriology, protozoology, epidemiology, industrial hygiene vital statistics, museum, library, etc A year will be required for the erection of the building the securing of equipment and the gathering together of a suitable staff of teachers It is expected, therefore, that the school will be opened in October, 1917 Johns Hopkins University will be the eleventh institution to establish a school of hygiene and public health The others given in order of their organization are connected with the University of Pennsylvania Harvard University, the Universities of Michigan, Wisconsin and Colorado, the Detroit College of Medicine and Surgery, University and Bellevue Hospital Medical College, Tulane University and the Universities of Minnesota and California All these schools have been established since 1909, and undoubtedly have been organized in recognition of the urgent need of improved opportunities for public health instruction As a result the science of sanitation and public health will be more rapidly advanced, and methods of teaching will be improved Still more important, however, they have provided the facilities and the instructors whereby medical students, physicians, engineers, chemists, biologists and others may fit themselves for useful careers in public health work These graduates will go forth better prepared not only for their own particular work but also to instruct others how to live and how to keep well

Bequests and Donations—The following bequests and donations have recently been announced

United Hebrew Charities, Mt Sinai Hospital, Home for Aged and Infirm Hebrews, and Montefiore Home for Incurables, each $1,000, by the will of Mrs Rachael Lahmeier

St Luke's Hospital, New York, $10,000, Columbia Hospital, $5,000, State Trustees' Aid Association, $3,000, by the will of Miss Alice T Wheelock

Municipal Hospital for Monroe, N C, property valued at $20,000, by the will of Mrs Ellen Fitzgerald, Monroe

Brooklyn Hospital, Brooklyn City Dispensary and Brooklyn Home for Consumptives, each $5,000, by the will of Senator Stephen Griswold

Columbia University, $100,000 to establish an endowment fund for research into the cause, prevention and cure of cancer, by the will of Emil C Bondy

Albany Medical College, for college administration, a donation of $40 000, by anonymous benefactors, $1,000, for the building fund of the institution, a donation from Simon W Rosendale, president of the board of trustees

Washington University Medical School, St Louis, a donation of $166,000, from Edwin Mallinckrodt, and a donation of a similar amount from John W Milliken, both of St Louis

A hospital for Steger, Ill, by the will of John V Steger

Minnesota State Tuberculosis Fund, $11,937 10, as the result of a tax on boxing bouts

Presbyterian Hospital, Chicago, $12,000, the income of which is to be used for the maintenance of a room to be known as the Marion Louise Room, Chicago Visiting Nurses' Association, $10,000, and United Charities of Chicago, $5,000, by the will of Ella M Walker

Philadelphia General Hospital, a contingent bequest of $1,000 for the tuberculous poor, by the will of Horace Haverstick

Johns Hopkins Hospital, $95,000, to be devoted to the investigation of tuberculosis and the better teaching of physicians and students in the recognition and management of the disease and the care of patients at the hosptial, by the will of Kenneth Dows, New York

Free Hospital for Women, Brookline, Mass, interest in the estate at 511 Washington Street and 16 24 West Street, Boston, for the purpose of erecting a cancer hospital Waltham (Mass) Baby Hospital, $5,000, and Industrial School for Crippled and Deformed Children and New England Hospital for Women and Children, Boston, the residue of the $70,000 trust fund after the payment of $19,000 legacies, by the will of Mrs Anna Bolton Matthews, Boston

Michigan Child Welfare League, be ween $4,000 and $5,000 on tag day, June 17

Visiting Nurses' Fund of Sheboygan, Wis, $1,500, collections of tag day, June 17

FOREIGN

Deaths in the Profession Abroad—P A V Rommelaere, professor emeritus of medicine at the University of Brussels, aged 79——H Favre of Paris, aged 88——F Dubief, member of the French house of deputies and at one time of the French cabinet, aged 66——A Faye of Christiania, the leading historian of medicine in Norway Without being officially connected with the University of Christiania, he was several times called on to deliver courses on medical history He succumbed to cancer of the stomach at an advanced age——A Riva, professor of clinical medicine at the University of Parma, a pioneer in various fields of pathology and clinical medicine, aged 72

WAR NOTES

Assignments in Eastern Department—The following assignments of army medical officers to take charge of the physical examination preliminary to mustering in the Organized Militia into the service of the United States are announced Connecticut, Maj Charles Y Brownlee, M C, at Niantic, Georgia, Maj Henry Page, M C, at Macon, Maine, Capt George B Foster, M C, at Augusta, Massachusetts, Maj James F Hall, M C, at South Framingham, New Hampshire, Lieut-Col Henry D Snyder, M C, Concord, New Jersey, Capt Nelson Gapen, M C, Sea Girt, New York, Maj Sanford H Wadhams, M C, Green Haven, North Carolina, Maj Edward F Geddings, M C, Camp Glen, Morehead City, Pennsylvania, Maj Conrad P Koerper, M C, Mt Gretna, and Virginia, Lieut-Col Alexander N Stark, M C, Richmond

Red Cross Relief Work—The American Red Cross in its instructions to chapters, dated June 22, indicates the duty of the American Red Cross to undertake two important lines of service in consequence of the calling out of the National Guard for the protection of the southwestern international boundary The first line of service is that of supplies for soldiers in camps The Red Cross will collect, forward and distribute suitable articles for the soldiers Receiving and distributing depots will be established at San Antonio and El Paso in charge of competent persons, and supplies sent to these depots will be distributed in the camps in accordance with the rules prescribed by the military authorities It is probable that intermediate depots will be established in a number of important centers The second line of service is the care of destitute families of soldiers, regarding which an announcement will be made at an early date Chapters are advised immediately to segregate their work into two sections one on military relief and one on civilian relief The chapters are urged to exercise a thoroughly cooperative and cordial spirit toward other organizations and agencies which desire to participate in this work All such organizations should be invited to join hands with the Red Cross and thus give a demonstration of united, harmonious community effort All questions of policy should be reported to the Director General of Civilian Relief, at Washington, D C

Sanitary Troops Ordered Out—In addition to the sanitary detachments assigned to the various units of the Organized Militia, the following organizations have been ordered to mobilization California, one ambulance company and one field hospital, Colorado, one field hospital, Connecticut, one ambulance company and one field hospital, District of Columbia, one field hospital, Georgia, one field hospital, Illinois, two field hospitals, Indiana, one field hospital and one ambulance company, Iowa, one field hospital and one ambulance company, Kentucky, one field hospital and one ambulance company, Maryland, one field hospital and one ambulance company, Massachusetts, one field hospital and one ambulance company, Michigan, one field hospital and two ambulance companies, Missouri, one field hospital and one ambulance company, Nebraska, one field hospital, New Jersey, one field hospital and one ambulance company, New York, three field hospitals and four ambulance companies, North Carolina, one field hospital and one ambulance company, Ohio, three field hospitals and two ambulance companies, Oklahoma, one field hospital, Pennsylvania, two field hospitals and two ambulance companies, Rhode Island, one ambulance company, Tennessee, one field hospital and one ambulance company, Virginia, one field hospital, and Wisconsin, one field hospital The entire National Guard of Arizona and Texas was mustered into the United States service in May

Call for Service—To officers of the Medical Corps required for service in mobilization camps, the following telegram has been sent by the commander of the Central Department "You as first lieutenant, Medical Reserve Corps, inactive list are hereby called into active service Proceed at once with or without uniform to mobilization camp at ———— and report to senior mustering officer there for temporary duty as medical examiner of organized militia Wire acceptance immediately" In the Central Department the following medical officers have been recommended for duty and have reported

Illinois—Lieuts John A Hornsby, Arthur R Reynolds, James F Presnell, Henry F Lewis, Edward C Morton, Clarence L Wheaton and Francis Deacon, Chicago, Albert H Roler, Evanston, and Jesse C Mason, Harvard, have reported to Maj James M Phalen, M C, camp surgeon at Springfield Ohio—Lieuts George C Schaeffer C E Pfeifer, John B Alcorn and Frank Winders, Columbus, Archibald M Wilkins, Delta, and Rufus A Van Voast, Cincinnati, have reported to Maj Ernest L Ruffner, M C, U S Army, camp surgeon at Columbus Minnesota—Lieuts Alexander R Colvin, John M Armstrong, St Paul, and Alexander E Hedback, Minneapolis, have reported to Maj George H Crabtree, M C, camp surgeon at Fort Snelling Michigan—Lieuts Emil H Webster (at present on active duty at Fort Brady, Mich), Harry L Arnold, Oswego, and Preston M Hickey, Detroit, have reported to Maj James L Bevans, M C, camp surgeon, at Grayling Wisconsin—Lieuts A E Midgley, Whitewater, Frederick C Huff, Sturgeon Bay, George V I Brown, Milwaukee, and William G Merrill, Grand Rapids, have reported to Lieut Col James M Kennedy, M C, camp surgeon, at Camp Douglas Indiana—Lieuts Thomas Z Ball, Waveland, and Thomas B V Keene, Carleton B McCulloch, Horace R Allen, John J Boaz and Blanchard B Pettijohn have reported for duty to Lieut Col William B Banister, M C, camp surgeon, at Fort Benjamin Harrison, Indianapolis Iowa—Lieuts Eugene R Lewis, Dubuque, James E Kessell and Edward E Dorr, Des Moines, Evan S Evans, Grinnell and Frederick G Murray, Cedar Rapids, have reported to Maj Kent Nelson, M C camp surgeon at Des Moines Missouri—Lieuts Reinhard E Wobus, Major G Seelig, Downey L Harris and Clarence Loeb, St Louis, and Guy L Noyes, Columbia have reported to Maj M A W Shockley M C, camp surgeon at Nevada Kansas—Lieuts John E Hewitt (now on active duty at that post), Frederick W O Donnell Junction City George L Tooley Washington, and Samuel T Millard, Topeka have reported to Capt George P Peed M C, camp surgeon at Fort Riley Nebraska—Lieuts Emile L DeLanney, Omaha, and Albert A Fricke South Omaha have reported to Capt Charles F Craig M C, camp surgeon at Lincoln Colorado—Lieuts William L Edmunson, William W Grant and Walter A Jayne Denver, have reported for duty to Capt Leonard S Hughes, M C, camp surgeon, at Golden Wyoming—Lieut Henry C Bierbower (now on active duty at Fort D A Russell Wyo) has reported to Capt Ray W Bryan, M C camp surgeon at Cheyenne North Dakota—Lieuts Frederick B Strause and Albert M Fischer have reported to Capt Clarence H Connor M C, camp surgeon at Fort Lincoln South Dakota—Lieut William I Clark Aberdeen has reported to Capt Leartus J Owen M C, camp surgeon at Redfield

Organization of Base Hospital Units—Col Jefferson R Kean, Medical Corps, U S Army, as director general of Military Relief for the American Red Cross, assumes the organization of base hospital units from the personnel of the larger civil hospitals in this country These base hospitals are intended to be transported on the outbreak of war to the seat of military operations where they are located at the city which is selected to be the military base One of these is needed for each 20,000 men brought into service They receive the sick and wounded coming from the field hospitals at the front, and in them the wounded soldier in his journey to the rear first finds a comfortable bed and trained nurses Thirteen base hospitals with skilled personnel are now organized and seven more are in process of organization Each base hospital is equipped to receive 500 patients Although organized by the Red Cross, they are not administered by it, but when called into active service pass under the exclusive authority of the War Department and become a part of its medical service The medical officers are given military commissions in the Reserve Corps, and receive volunteer commissions when called into active service The nurses in the same way belong to the Red Cross Nursing Service, and in time of war become a part of the Army Nurse Corps The following are the locations of these hospitals and the heads of the various services

PRESBYTERIAN HOSPITAL New York—Director and chief of surgical service Dr George E Brewer principal assistant Dr Alfred Stillman chief of medical service Dr Warfield T Longcope chief of laboratory service Dr Karl M Vogel, chief nurse Miss Anna C Maxwell

MOUNT SINAI HOSPITAL New York—Director Dr N E Brill chief of surgical service Dr Howard Lilienthal chief of medical service Dr R Weil chief of laboratory service Dr George Baehr chief nurse Miss Elizabeth A Greener

BELLEVUE HOSPITAL New York—Director and chief of surgical service Dr George David Stewart chief of medical service, Dr Van Horne Norrie chief of laboratory service Dr Charles Norris chief nurse Miss Clara D Noyes

NEW YORK HOSPITAL New York—Director and chief of surgical service Dr Charles L Gibson chief of medical service Dr Lewis A Conner chief of laboratory service, Dr William J Elser chief nurse Miss M H Jordan

NEW YORK POST GRADUATE HOSPITAL New York—Director Dr Samuel Lloyd chief of surgical service Dr Edward W Peterson chief of medical service Dr Arthur F Chace chief of laboratory service Dr Ward J MacNeal chief nurse Miss Amy Patmore

BROOKLYN for Navy—Director and chief of surgical service Dr W B Brinsmade chief of medical service Dr Luther F Warren chief of laboratory service Dr Robert F Barber chief nurse Miss Frances van Ingen

MASSACHUSETTS GENERAL HOSPITAL Boston—Director Dr Frederic A Washburn chief of surgical service Dr George W W Brewster chief of medical service Dr Richard C Cabot chief of laboratory service Dr J Homer Wright chief nurse Miss Sara E Parsons

BOSTON CITY HOSPITAL Boston—Director Dr J J Dowling chief of surgical service Dr Edward H Nichols chief of medical service Dr John Jenks Thomas chief of laboratory service Dr Arial W George chief nurse Miss Emma M Nichols

HARVARD UNIVERSITY, Massachusetts—Director and chief of surgical service Dr Harvey Cushing chief of medical service Dr Roger Lee chief of laboratory service, Dr Richard P Strong chief nurse Miss Carrie M Hall

LAKESIDE HOSPITAL Cleveland—Director Dr George W Crile chief of surgical service Dr W E Lower chief of medical service Dr C F Hoover chief of laboratory service, Dr H T Karsner chief nurse Miss Grace Allison

ROCHESTER N Y—Director John M Swan chief of surgical service Dr C W Hennington chief of medical service Dr William V Ewers chief of laboratory service Dr C C Sutter chief nurse Miss Emma Jones assistant Miss Jessica Heal

JOHNS HOPKINS HOSPITAL, Baltimore—Director Dr Winford Smith chief of surgical service Dr J M T Finney chief of medical service Dr T C Janeway chief of laboratory service Dr T R. Boggs chief nurse, Miss Bessie E Baker

HARPER HOSPITAL Detroit—Director Dr Angus McLean chief of surgical service Dr C D Brooks chief of medical service Dr B R Shurly chief of laboratory service Dr P M Hickey chief nurse Miss Emily McLaughlin

PARIS LETTER

Paris, June 1, 1916

The War

SKULL WOUNDS

Many problems have arisen in regard to this subject both from the surgical and the neurologic point of view For this reason, the Societe de chirurgie de Paris and the Societe de neurologie de Paris recently met in a common session under the chairmanship of the undersecretary of state for public health, in order to study a number of these questions The following subjects were discussed

1 Early operation in wounds of the skull Should one always operate? What types of operation should be recognized? How far should one go? When in presence of a simple crack of the external table, what operation should be performed, and should one always diagnose fracture of the internal table and search for fragments? Is the flap preferable to the crucial incision? What are the indications, technic and the results of early extraction of projectiles which have penetrated the brain?

2 Transport of patients with skull wounds

3 Early secondary complications of skull wounds, particularly hernia of the brain, abscesses, meningitis, general or partial epilepsy, their frequence, prognosis, and treatment Deferred extraction of projectiles

4 Late complications (affections of the motor apparatus of speech and of sight, and subjective troubles) Liability of wounded with skull injuries to develop these complications after healing of their wounds For what period does this liability extend? How should the military value of such men be judged?

5 Cranioplasty indications, technic, complications, immediate and remote Should the indemnity accorded to a wounded man be reduced on the ground of his refusal to submit to this operation? Protective prosthesis for large gaps in skull

6 Protective value of the morion or helmet

NECESSITY TO REMOVE EVEN THE SMALLEST PROJECTILES WHICH HAVE PENETRATED THE BRAIN

At the Reunion medico-chirurgicale de la I-re Armee Dr Barnsby brought forward two cases which prove the danger of the smallest fragments In the first case the patient was a soldier from whom was removed, on the third day after receipt of the wound, a fragment the size of a very small pea This fragment was extracted from the frontal lobe in which there had already formed an abscess as large as a hazelnut In the second case, a fragment of the size of a wheat grain was extracted from the left rolandic region The rise of temperature and development of a right hemiplegia with aphasia had precipitated the intervention In the course of the operation there was found a voluminous abscess in the pus of which was the projectile It seemed advisable, therefore, to remove these small projectiles just as systematically as the large ones The best method seems to be a combination of the compass for depth and direction and control by screen observations with Roentgen rays, which permits the simple and rapid extraction with the minimum of injury

THE USE OF TEMPORARY ARTIFICIAL LIMBS INSTEAD OF CRUTCHES

At the Societe de chirurgie de Paris, Professor Depage has made an interesting communication on this subject He avoids in almost every case the use of crutches after amputation Their use modifies the statics of the body, keeps the stump fixed, and not infrequently causes paresis of the arm by compression of the brachial plexus Crutches are a bad instrument for those who have undergone amputation, and one ought to substitute the temporary artificial limb The latter can be made of a variety of materials At the suggestion of his assistant, Martin, Dr Depage has used plaster, reinforced by bands of metallic cloth The artificial limb so formed has a great advantage in that it adapts itself to the stump and that it answers all the indications for a normal gait It is inexpensive, easily made by a skilful nurse, and can be remade to meet the modifications undergone by the stump As soon as the latter has reached its final state, the temporary limb is replaced by a permanent one Depage has recently conceived the idea of employing shavings in the manufacture of artificial limbs The experiments which he has made in collaboration with Martin have been satisfactory This new sort of apparatus presents the following advantages possibility of being molded exactly on the stump, employing the whole of its surface and its bony points for a support, similarity in form of the artificial and natural limb, slight weight, great strength, cheapness and ease of manufacture

LATENT MYOCARDITIS

At the Reunion medicale de la IV-e Armee, Dr C Lian drew attention to the fact that acute articular rheumatism is often followed by a latent myocarditis which shows itself by palpitation and breathlessness after effort with or without precordial oppression and pain, where there is no sign of endocarditis or pericarditis Lian insists on the practical importance of these facts, the nonrecognition of which may lead to regrettable errors In fact, in a case of this kind, combining an extracardiac murmur and a history of rheumatism, a physician might easily make an erroneous diagnosis of endocarditis or pericarditis From this, he would be led to recommend a soldier for the auxiliary services or for discharge, while these cases of myocarditis are, as a rule, compatible with active service On the other hand, if the physician is able to set aside the possibility of endocarditis or pericarditis, he runs the danger of not recognizing the rheumatic origin of the trouble and of attributing it to purely nervous causes and, therefore, of not according to it the importance which it deserves It is necessary, therefore, in cases of palpitation, to bear in mind the possibility and characters of this latent myocarditis Although latent myocarditis is more common as a sequel of acute rheumatism, it may also result from any other infectious disease The prognosis is, as a rule, quite good, and unless there supervenes another infectious disease, the exacerbation of the rheumatism or great physical or moral exhaustion, hyposystole or asystole is not to be feared The treatment of the acute initial phase of myocarditis is that of the causal infectious disease, in the later stages, it must be palliative From the military point of view, the patient can as a rule be maintained in active service He may, if necessary, be changed from one arm to another or simply allotted to relatively sedentary work in his regiment or recommended not to be overworked As a rule it is not necessary, on account of these cardiac troubles, to transfer the patient to the auxiliary services or to discharge him

Prevention of Communicable Diseases in High Schools

At the Societe de medecine de Paris, Dr Gallois made a communication on the insufficiency of the measures taken in high schools to protect the pupils against communicable diseases Epidemics have recently broken out and it is only after about ten cases of illness that serious measures have been taken Gallois desires to see a complete reform of the present organization In his opinion, the physician of the high schools should be responsible for the sanitary police of the establishment When a day pupil has been absent more than five days, it should be the duty of the physician to go to the pupil's home to ascertain the nature of the illness in order that he may take the necessary measures To the objection that in any case the pupil must produce a certificate before being admitted into the school, he answers that this certificate arrives much too late to admit of the necessary precautions being taken Again, it has been said that this sanitary police function belongs to the epidemiologic service, but, in this respect, this service functions badly, nor could it be otherwise, since, in order to put it in movement, a declaration of the treating physician is necessary The latter is not always made, and, when it is, it does not always mention that the patient is a pupil of the high school The epidemiologic service is too complicated an organization It is enough for one wheel to go wrong for the whole machine to stop The prophylaxis of communicable diseases in school can only be satisfactorily assured by the concentration of all direct responsibility in the hands of one person, and by the elevation of school physician to the rank of defender of the health of the pupils

Personal

At its sitting, May 23, the Academie de medecine proceeded to the election of a foreign corresponding member Dr Charles Willems, surgeon of Ghent, was almost unanimously elected

At a recent session, the Academie des sciences held an election for a correspondent in the section of medicine and surgery in succession to the late Professor Mosso of Turin Dr Bergonie, professor of biologic physics and medical electricity at the Faculte de medecine de Bordeaux, was elected by sixteen to fourteen votes Dr Bergonie has acquired a great reputation by his remarkable work on electricity in its applications to medicine, and on radiography He is the founder of the review under the name *Archives d'electricité medicale, experimentale et clinique de Bordeaux*

LONDON LETTER

London, June 5, 1916

The War

THE ARMY AND MEDICAL SERVICE

In his first dispatch, Sir Douglas Haig, the new commander-in-chief of the British forces in France, says that all branches of the medical services deserve the highest commendation for the successful work done by them, both at the front and on the lines of communication The sick rate has been consistently low, there has been no serious epidemic, and typhoid fever, the bane of armies in the past, has almost completely disappeared, owing to preventive measures energetically carried out The results of exposure incidental to trench warfare during the winter months were to a great extent kept in check by careful application of the precautions recommended and taught by regimental medical officers The wounded have been promptly and efficiently dealt with, and their evacuation to the base has been rapidly accomplished The close cooperation which has existed between the officers of the regular medical service of the army and those members of the civil medical profession who have patriotically given their valuable services to the army has largely contributed to the prevention of disease and to the successful treatment and comfort of the sick and wounded As part of the medical services, the Canadian army medical corps has displayed marked efficiency and devotion to duty The Commission of Graves Registration and Enquiries, since it first undertook the work eighteen months ago, has registered and marked over 50,000 graves Without its labors many would have remained unidentified It has answered several thousand inquiries from relatives and supplied them with photographs Flowers and shrubs have been planted in most of the cemeteries which are sufficiently far removed from the firing line, and all cemeteries which it is possible to work in during the daytime are now being looked after by noncommissioned officers and men of this unit The valuable nature of the work performed by the officers of the central laboratory and the chemical advisers with the armies, in investigations into the nature of the gases and other new substances used in hostile attacks, and in devising and perfecting means of protecting our troops against them, is deserving of recognition The efforts of these officers materially contributed to the failure of the Germans in their attack of Dec 19, 1915, as well as in the various gas attacks since then

The Limitations of Science in Education

In this country the classics have always occupied the principal position in higher education, and though the greater recognition is being given to the claims of science, it still occupies a subordinate position As shown in previous letters to The Journal, the protests of those who demand greater recognition for science have been increased by the war A counterblast, signed by some university professors, including Sir William Osler and other public men, has been published in the *Times* They point out that as material means and technical skill are the most obvious factors in deciding the war, there is a risk that these may be prized to the exclusion of forces even more important Technical knowledge is essential to our industrial prosperity and national safety, but education should be nothing less than a preparation for the whole of life It should introduce the future citizens of the community not merely to the physical structure of the world in which they live but also to the deeper interests and problems of politics, thought and human life It should acquaint them, so far as may be, with the capacities and ideals of mankind, as expressed in literature and in art, with its ambitions and achievements as recorded in history, and with the nature and laws of the world as interpreted by science, philosophy and religion If we neglect physical science, we shall have a very imperfect knowledge of the world around us, but if we ignore or subordinate the other elements of knowledge, we shall cut ourselves off from aspects of life of even greater importance Even physical science will suffer Some of its most distinguished representatives have strongly insisted that early specialization is injurious to the interests they have at heart, and that the best preparation for scientific pursuits is a general training which includes some study of language, literature and history Such a training gives width of view and flexibility of intellect Industry and commerce will be most successfully pursued by men whose education has stimulated their imagination and widened their sympathies The nation requires mental training even more than physical science

We might enthrone physical science in all our schools without acquiring as a nation what we most need the persuasion that knowledge is essential to progress, and that it has to be acquired by the faculty of independent reflection, which implies the power of selecting, combining and testing the essential facts of the subject in hand This scientific method is not the peculiar property of physical science, all good work in all studies is based on it, it is indispensable to law, history, classics, politics and all branches of knowledge rightly understood What we want is scientific method in all branches of an education which will develop human faculty, and the power of thinking clearly to the highest possible degree In this education, the study of Greece and Rome should have a large part, because our whole civilization is rooted in the history of these peoples, and without knowledge of them cannot be properly understood The small city communities of Greece created the intellectual life of Europe In their literature we find models of thought and expression, and the subtle and powerful personalities who originated for Europe all forms of poetry, history and philosophy, and even physical science itself, no less than the ideal of freedom and the conception of a self-governing democracy, while the student is introduced to the great problems of thought and life at their springs, before he follows them through the wider but more confused currents of the modern world The educated citizens of a great empire should not remain ignorant of the first state that met the problem of uniting in a contented and prosperous commonwealth nations differing in race, temper and culture, and which has left so deep a mark on the language, law and political conceptions of Europe Some knowledge of Latin is indispensable for the intelligent study of any one of these things and even for the intelligent use of our own language Greece and Rome afford us unique instances the one of creative and critical intelligence the other of constructive statesmanship Nor can we afford to neglect the noble precepts and shining examples of patriotism with which their history abounds

Proposed School of Medicine at Johannesburg

It seems likely that another medical school will be added to those in the British Empire A representative meeting of the medical profession of the Transvaal has been held at the South African Institute for Medical Research Dr Watkins-Pitchford, director of the institute, moved a resolution, which was unanimously adopted, that "the time has now arrived when in the interests of the community a school of medicine should be established in the Transvaal with facilities for granting diplomas" He said that Johannesburg had a European population larger than any other town in South Africa and that it is essentially an industrial town Its total population at the present time is 237,000, of which one half—119,000—are Europeans For the purposes of higher education, the smaller towns of the Rand, from Randfontein in the west to Springs in the east, should be associated with the central town of Johannesburg and these being included the total population became 430,000, of which 206 000 are white people In Johannesburg alone, there are more than twice and on the whole of the Witwatersrand more than four times, as many people as there were in Leeds when its medical school was established The number of hospital beds on the Witwatersrand is about 8,170, representing a wealth of material for clinical instruction which is unequaled throughout the world There are some 520 physicians registered in the Transvaal, of whom 240 obtained their qualifications in Scotland, 172 in England, and 58 in Ireland, 43 hold diplomas obtained in various other countries, including 3 from Canada and 2 from Australia, and there are 5 physicians who have no qualifications other than the license of the late government of the South African Republic

A Girl Burnt to Death on an Omnibus

From time to time the deaths of women due to their clothes catching fire are reported, but never apparently under such peculiar circumstances as the following As a girl was traveling along the Strand on the top of a motor omnibus the lower part of her dress caught fire The material, which is described as voile was so inflammable that she was immediately enveloped in flames Two soldiers, who were on the bus endeavored to extinguish the flames as soon as they could unbutton their tunics and throw them around her, and the conductor assisted with the omnibus aprons and a chemical extinguisher But she was so severely burned that she died The origin of the fire could not be ascertained but it was probably caused by the carelessness of a smoker throwing down a lighted match

Marriages

Thaddeus Dewey Smith, M D, Neenah, Wis, to Miss Fredrica Doris Krueger of Kew Gardens, L I, N Y, April 29

Frederick Louis Wahrer, M D, Fort Madison, Iowa, to Miss Josephine Jane Gabelman of Marshalltown, Iowa, June 1

William Sebastian De La Hoyde, M D, to Miss Mary Newton, both of Brooklyn, at Williamsburg Hospital, June 7

Charles Rollin Grandy, M D, Norfolk, Va, to Miss Elizabeth Norfleet Neely of Portsmouth, Va, June 10

Asst Surg Summerfield M Taylor U S Navy, to Miss Florence Davis Riner, at Olongapo, P I, April 14

Charles Stewart Sutton M D, to Miss Grace Hislop, both of St Cloud, Minn, at Fargo, N D, June 14

Jesse Day Taylor, M D, University Place, Lincoln, Neb, to Miss Carita Schreckengast of Lincoln, June 14

John Joseph McLoone, M D, Phoenix, Ariz, to Miss Hattie Vivian Watkins of Flagstaff, Ariz, June 7

John Duncan Quackenbos, M D, New York, to Miss Louise Dudley White of Princeton, N J, June 7

Lionel Louis Albert, M D, Central Falls, R I, to Miss Gertrude B Steinmetz, at Yonkers, N Y, May 21

Simon R Karpeles, M D, Washington, D C, to Kate Breckenridge Bogle, M D, Danville, Ky, June 7

Marguerite Deininger, M D, and Mr Louis Keser, both of Richmond, Calif, at Alameda, Calif, June 9

William Parvin Bramlett, M D, Philadelphia, to Miss Rebecca Stroud Kerr of Towanda, Pa, June 15

Harry Welday Mayes, M D, Brooklyn, to Miss Elizabeth Gertrude Lamb of St Petersburg, Fla, June 3

John Bradford Brinson, Jr, M D, to Miss Martha Hawkins Bailey, both of Monticello, Fla, April 25

Theodore Andrew Baumann, M D, DeLand, Ill, to Miss Mabel Ida Prentice of Rockford, Ill, June 2

Reginald James Henry Stroud, M D, Gleeson, Ariz, to Miss Emma Luhrs of Phoenix, Ariz, June 7

Isidor Samuel Faust, M D, Bronx, New York City, to Miss Edith Fern of Elizabeth, N J, June 11

Elbert Lafayette Spence, M D, Fulton, Mo, to Miss Mittie V Robnett of Columbia, Mo, June 10

Joseph Augustine O'Conor, M D, to Miss Theodora Loretta Brown both of New York, June 7

Cecil Gardner Harrod, M D, to Mrs Mollie Wasson, both of Burney, Ind, at Louisville, Ky, June 7

Harry William Helmen, M D, South Bend Ind, to Miss Norma Trayler of Indianapolis, June 7

Milton Weston Hall, M D, Evanston, Ill, to Miss Florence Patersen of Chicago, recently

Samuel Goodman, M D, Kansas City, Mo, to Miss Blanche Babette Wedeles of Chicago, June 17

Heman R Bull, M D, Grand Junction, Colo, to Miss Ruth B Fulwider of Denver, June 17

Otis Hackett Johnson, M D, New York, to Miss Mary Diana Stone of Ithaca, N Y, June 17

Frank Benedict Rosinski, M D to Miss Theodora Sophia Kocinski, both of Cleveland, June 21

Clarence Wrigley Judd M D, Philadelphia, to Miss Virginia Vogt of Baltimore, June 7

Ernest Nelson Greenman M D, to Miss Portia C Snow, both of Kankakee, Ill June 15

Sergeant Price Martin, M D, to Miss Alice Wilson, both of Rochester Minn, June 17

Fred Wade Jones, M D, Alton, Ill, to Miss Mary Krome of Edwardsville Ill, June 10

Robert Shaw Taylor, M D, Buffalo, to Miss Alma Ericson of Biggsville, Ill, June 8

Lee Welsey Pollock, M D, to Miss Addie Baihly, both of Rochester Minn, June 17

Jay C Miller, M D, Garrison, Neb, to Miss Edna Macrow of Lincoln, Neb, June 15

Isidore Goldstein, M D, to Miss Hazel Ritter, both of New York June 4

Deaths

Thomas Franklin Smith, M D, New York City, New York Medical College, New York City, 1860, aged 83, visiting physician to the Metropolitan Hospital, New York City, and examiner in lunacy, treasurer of the American Institute of Homeopathy for twenty-three years, mustered with the Seventh Regiment, N G N Y, of which he was major, into the United States service in 1861 as chaplain, and reenlisted as acting assistant surgeon, U S Army, serving in that capacity for fifteen months, for many years manager of the New York Association for Improving the Condition of the Poor, and vice president of the Jennie Clarkson Home for Children, Valhalla, N Y, died at his home, June 6

Paul Paquin, M D, Kansas City, Mo, University of Missouri, Columbia, 1887, aged 55, a Fellow of the American Medical Association and a member of the Medical Society of North Carolina, for several years professor of bacteriology, pathology and comparative medicine in his alma mater, secretary of the Missouri State Board of Health from 1896 to 1899, afterward a resident of Asheville, N C, for several years, director and executive officer of the Hospital and Health Board of Kansas City, died in the Christian Church Hospital, Kansas City, June 22, from tubercular meningitis

William L Tadlock, M D, Talbott, Tenn, Louisville, Ky, Medical College, 1898, aged 48, a member of the Tennessee State Medical Association, while returning from a Chautauqua at Morristown, Tenn, with his wife and nephew, in an automobile, was struck by a train of the Southern Railway at a grade crossing at Talbott, Dr Tadlock and his nephew were instantly killed, and Mrs Tadlock died from her injuries forty minutes later

Oscar Paul Chester, M D, Chicago, Northwestern University Medical School, 1896, aged 45, a Fellow of the American Medical Association, formerly attending physician to Mercy Hospital, Chicago, and instructor in physical diagnosis in his alma mater, who had been obliged to relinquish his practice two years ago on account of cerebral hemorrhage, died at the home of his mother in Champaign, Ill, June 24

Samuel T McDermith, M D, Denver, University of Louisville, Ky, 1876, aged 67, formerly a Fellow of the American Medical Association and a member of the Colorado State Medical Society, formerly president of the medical section of the National Fraternal Congress, and for twelve years supreme medical examiner of the Fraternal Union of America, died suddenly in his office, June 15, from heart disease

Henry Hughes, M D, Long Branch, N J, College of Physicians and Surgeons in the City of New York, 1873, aged 67, a resident of Long Branch for more than forty years, for a number of years a member of the medical staff of the Monmouth Memorial Hospital, died in Miss Alton's House for Private Patients, New York City, June 14, from ascites

Fenimore Cooper Hoke, M D, Richfield Springs, N Y, College of Physicians and Surgeons in the City of New York, 1896, aged 45, formerly a Fellow of the American Medical Association, a member of the Medical Society of the State of New York, for many years a practitioner of New York City, died at his home, June 16

William Arthur Charlton, M D, Palmyra, Neb, Lincoln, Neb, Medical College, Eclectic, 1908, aged 32, professor of materia medica and therapeutics in his alma mater, a member of the Nebraska State Medical Association, was instantly killed by the overturning of his automobile about nine miles from Lincoln, June 5

Clarence Webster Coulter, M D, Oil City, Pa, University of Pittsburgh, 1888, aged 59, formerly a member of the Medical Society of the State of Pennsylvania, a member of the National Association of Railway Surgeons, local surgeon of the Pennsylvania System to the Oil City Hospital, died at his home, June 10

John Ellis Gilman, M D, Chicago, Hahnemann Medical College, Chicago, 1871, aged 74, emeritus professor of materia medica and therapeutics in his alma mater, one of the oldest and most esteemed homeopathic practitioners of Chicago, died in St Luke's Hospital, June 21, from cerebral hemorrhage

Lawrence Thomas Aitkin, M D, Brooklyn, Long Island College Hospital, 1908, aged 31, assistant to the Coney Island Hospital, the Medical Department of St Peter's Hospital, the Long Island College Hospital and the Polhemus Clinic, Brooklyn, died at his home, June 18

Robert William Hutcheson, M R C S, England, 1857, M D University of St Andrews, Dundee, Scotland, 1858, Licentiate of the Apothecaries' Society of London, 1859, aged 80, for fifty years a practitioner of Rockville Center, N Y, the dean of the medical profession of Long Island, died at his home, June 13

Phineas J Montgomery, M D, Los Angeles, formerly of Council Bluffs, Ia, Hahnemann Medical College, Chicago, 1880, aged 74, formerly consulting physician and surgeon to the Council Bluffs General Hospital and physician to Mercy Hospital, died at his home in Hollywood, Los Angeles, June 2

Thomas Walter Long, M D, Newton, N C, New York University, New York City, 1885, aged 56, a member of the Medical Society of the State of North Carolina, who fractured his hip in a fall while alighting from an automobile at Newton, June 9, died in a hospital in Hickory, N C, June 11

William Lane Duff, M D, Harrisburg, Pa, Philadelphia University of Medicine and Surgery, 1868, Medical College of Ohio, Cincinnati, 1874, aged 71, a member of the Medical Society of the State of Pennsylvania, for nearly forty years a practitioner of Harrisburg, died at his home, June 8, from uremia

Samuel Murtland, M D, New York City, College of Physicians and Surgeons in the City of New York, 1883, aged 66, formerly a member of the Medical Society of the State of New York, a fellow of the New York Academy of Medicine, died at his home, June 15

Thomas Kirkpatrick, M D, Garnett, Kan, College of Physicians and Surgeons, Chicago, 1883, aged 58, a member of the Kansas Medical Society, secretary of the State Board of Health under Governor Morrill, died at his home, June 11, from heart disease

Solomon Carrington Minor, M D, New York City, New York University, New York City, 1892, aged 66, formerly a Fellow of the American Medical Association a member of the Medical Society of the State of New York, died at his home, June 16

Levant Emery Hackley, M D, Oak Park, Ill, College of Physicians and Surgeons in the City of New York 1850, aged 89, for many years a druggist of Minnesota, Chicago, and Wisconsin, died at his home, June 13, from senile debility

David Saunders George, M D, Marshallberg N C, North Carolina Medical College, Charlotte, 1903, aged 51, a Fellow of the American Medical Association, died recently in a hospital in Morehead City, N C

John C Knauer, M D, Reading, Pa College of Physicians and Surgeons, Baltimore, 1886, aged 52, died in the Homeopathic Hospital, Reading, June 3, from septicemia due to an operation wound

James J Evans, M D, Straud, Okla, University of Louisville Ky, 1894, aged 43, a member of the Oklahoma State Medical Association, died suddenly at his home, June 5, from heart disease

William F Beck, M D, Buffalo, N Y, University of Buffalo, 1893, aged 59, for several years president of the Clinton Street Business Men's Association, died at his home, June 2

J T Sparks, Camden, Tenn (license, Tennessee, 1885), for more than thirty years a practitioner, died at his home six miles north of Camden, June 7, from cerebral hemorrhage

Max Hermann, M D, Detroit, Detroit College of Medicine and Surgery, 1910, aged 30, a Fellow of the American Medical Association, died at his home, June 3

Thomas H Coe, Byrdstown, Tenn (license, Tennessee, 1889), aged 57, for thirty-four years a practitioner, died at his home about June 8, from tuberculosis

Thacker Ellsworth Lee, M D, Washington, D C, Howard University, Washington, D C, 1892, aged 56, died at his home, June 8, from pernicious anemia

Peter Hewetson, Amanda Ohio (license, Ohio, years of practice, 1896), aged 85, for sixty years a practitioner of Amanda, died at his home, June 3

Harlow Erwin Dunton, M D, Brooklyn, University of Vermont, Burlington, 1877, aged 55, died at his home June 6, from cerebral hemorrhage

Alfred Paul Keam, M D, St Paul, Detroit Medical College 1880, aged 63, died at his home, June 2, from angina pectoris

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

WINE OF CARDUI SUIT

Instructions to the Jury

BY THE HONORABLE JUDGE GEORGE A CARPENTER

The following are the instructions of Judge Carpenter as given to the jury in the Wine of Cardui suit, Friday morning, June 16 Because of their importance, the instructions are printed out of their order

Gentlemen of the Jury —

For nearly three months you have been engaged in this trial That your labor might have been shortened is not important It means much to the litigants, and your patience has been appreciated both by the Court and counsel Your service is compensated for, not alone by your fee bill but by your being able to be a substantial part of our greatest institution To be able to determine what is right between man and man is an opportunity which is not given to all and to fulfil well the duty imposed upon you in this case is a privilege which I foretell some day you will be proud of

Statement Made by the Court

"It has been represented to the Court that rumors have been spread, by whom it is at this time unimportant, to the effect that various doctors who have testified in this case, volunteered in open court the names of their patients Such rumors are false. All of the doctors, save one from Chicago, who had permission from his patient to disclose her name, requested the Court to allow them to withhold the names of their patients. This request was granted upon condition that the names be given to opposing counsel As a result, none of the names were mentioned in open court or given to the public, but were given privately to opposing counsel for verification and investigation The foregoing statement may be made a part of the record in this case "

[For explanation of the above see Editorial Comment page 41]

Counsel engaged on both sides are earnest and capable men charged with a serious responsibility to their clients and they have discharged their obligation to the full It is not strange that from time to time during the course of the trial, they have indulged themselves in a little acidity of comment towards each other and to have now and then argued so vehemently that the Court could not be heard Nothing that counsel have done or said, however, has passed the bounds of propriety, but I am bound to tell you that the evidence in the case you must take from the sworn witnesses and the exhibits which have been admitted for your consideration, and from no other source

It may be well at this point to impress upon you certain fundamental principles of law applying to all civil cases and to this case in particular You must realize, and I so instruct you, that yours alone is the right, power and duty to determine from the evidence what the real facts are Mine is the duty to advise you as to the law to be applied to those facts I wish you to understand this clearly and no matter what I may say in these instructions about the facts or the witnesses, no word of mine is or should be permitted to influence you one way or the other so far as the determination of any material fact is concerned If, perchance, I make any reference to the evidence, remember, please, it is for the sole purpose of enabling you to exercise your best judgment in settling the issues of fact involved It is my duty to declare to you the law and it is your duty to apply the law so declared You must determine what the facts are, uninfluenced by any views which you may think the Court has

The Court has not given or intended to give or even intimate at any time during this trial, nor in these instructions any views as to what are the facts or as to what inferences, if any, may be or should be drawn from the facts

You are charged, therefore to disregard any notions you may entertain as to what the Court's views may be on the evidence or its sufficiency Yours is the responsibility with reference to the facts, mine is to the law

On the other hand, whatever may be your personal impressions gained as laymen in regard to the law of this case also must be disregarded by you and you must be actuated entirely by what the Court tells you in these instructions is the law of the case

The Court instructs the jury that no evidence has been offered in this case to sustain the replication to the plea of release to the first count of the declaration, and that the plea of release to that count must prevail Therefore you cannot consider the first count of the declaration in making up your verdict and you are to decide the case upon the second count and upon the second alone

You may, however, consider all the evidence presented by either side in arriving at your verdict upon the second count

This is a case for damages based upon alleged libelous matter Libel is a malicious defamation expressed in writing or by signs or pictures or by epitaphs tending to impeach the honesty, integrity, virtue or reputation of a person and to thereby expose him to public hatred, contempt, ridicule or obloquy and cause him to be shunned or avoided or to injure him in business or reputation

One's good name is the only thing we know of in this material world which, if lost, cannot be compensated for by money Remember in this connection that the fair name of a business or partnership in a commercial community is quite as valuable an asset as the fair name of an individual, in the community in which he lives

No man is entitled lightly or recklessly or maliciously to defame either an individual or a commercial enterprise The law recognizes the value to an individual of a business reputation and strives to give redress for its injury It imposes upon him who attacks it by a libelous publication, a liability to make measurably full compensation for the damage to the reputation and for the shame and obloquy which are caused by the publication of the libel

The Court instructs you that the following paragraphs which are in the article published by the defendants in The Journal of the American Medical Association of July 18 1914, are libelous per se, and I will explain later what "libelous per se" means I quote from the second count of the declaration

> Such then in brief was the Journal s original article on Wine of Cardui In it two things were emphasized one, the more important the fact that Wine of Cardui is a vicious fraud the other that the preparation contains 20% alcohol and so far as the Association s chemists could discover no other drugs in amounts sufficient to give any medicinal effect In fact it seems that the Journal s statement to the effect that Wine of Cardui contains twice as much alcohol as is found in champagne has elicited more comment than the charge that the stuff is an outrageous fraud on the women of the country

And again from the same count, and the same article

> The second reason for the publication of an explanation was that the matter might be put up squarely to the membership of the Methodist Episcopal Church which has not only highly honored Mr Patten but has also accepted from Mr Patten money derived from the sale of a vicious and fraudulent patent medicine

And again

> As it has been said before however the alcohol content of Wine of Cardui is but a minor indictment against the product the basic objection to it is that the business has been built on deceit that its sale is a wicked and vicious fraud perpetrated on ailing women

And again

> To summarize 1 Wine of Cardui is a vicious fraud 2 Each dose contains as much alcohol as is found in about 100 drops of

> "whiskey and, so far as careful chemical and physiologic experi"ments show, does not possess any other drugs in sufficient quan"tities to give any appreciable therapeutic effect"

And again

> "The Journal believes that the exploitation of Wine of Cardui "is vicious and fraudulent"

These statements, I tell you, are libelous per se in that they charge that the plaintiffs were guilty of perpetrating a fraud upon women who purchased Wine of Cardui, in manufacturing and putting the same upon the market as a woman's tonic possessing medicinal value, with full knowledge, actual or constructive, that it was worthless and produced no medicinal effect except from its alcoholic content

In order to justify this charge it will be necessary for the defendants to prove First, that Wine of Cardui is worthless and produces no medicinal effect except from its alcoholic content. And, second, that the plaintiffs had knowledge or should have known of such fact while manufacturing Wine of Cardui and placing it upon the market

You are also instructed that the following paragraphs, which are in the same article published by the defendants in The Journal of July 18, are also libelous per se, and I am also quoting from the second count.

> "The older and new claims for Wine of Cardui were compared "and it was shown that while direct lies have been removed from "the labels and cartons of Wine of Cardui — which would render "the manufacturer liable under the Food and Drugs Act — the "most outrageous falsehoods were still printed in booklets sent "out to women who answered the Company's advertisements These "booklets are not subject to the penalties of the Pure Food Law"

And again

> "As it has been said before, however, the alcohol content of "Wine of Cardui is but a minor indictment against the product, "the basic objection to it is that the business has been built on "deceit To summarize, the claims made in recent advertising "sent out by the Chattanooga Medicine Company, but not subject "to the supervision of the Food and Drugs Act, were still false, "fraudulent and vicious"

Those statements are libelous per se, in that they charge the plaintiff with fraudulent and vicious advertising for deceiving the public and to have builded up their business of the manufacture and selling of Wine of Cardui on deceit

In order to justify this charge, it will be necessary for the defendants to prove, first that the advertising done by the plaintiffs and proved in this case was fraudulent That is, that the medicinal virtues possessed by Wine of Cardui were grossly overstated and that the effects of its use in female diseases for which it was recommended were not merely exaggerated, but were grossly misrepresented and that the plaintiffs knew or ought to have known, when such advertising was done, that the virtues of Wine of Cardui and the effects of its use were grossly overstated

Two defenses have been urged before you One is justification, and the other, qualified privilege, or as it is sometimes called, "fair comment" It may be well for me to illustrate to you the nature of these defenses

You may publish of a man the most serious thing possible and, while that publication constitutes libel per se (and by that I mean what is libelous by itself, and of itself without proof of more) you who have published it may come into court and say, "Yes, that is true I did publish this of the man, but everything I published is true and I justify my publication because I published the truth"

In other words, if I publish of a man that he is a thief and he complains, I may come into court and say that he is a thief and if I satisfy the jury that he is a thief, then the jury must render a verdict for the person publishing the libel That defense, in the law, we call justification and the reason it is allowed is because, in this country, while we do not permit license, we do allow the freedom of the press and the freedom of speech on the part of every person whether that speech be by word of mouth or written on a piece of paper

But along with this defense of justification comes another principle, and that principle is that the justification must be as broad and comprehensive as the libel itself

In other words, to use the same example, if I have charged a man with being a thief I must show to the satisfaction of the jury that he is a thief and if I should show only that he was a man who did not keep his word, or that he had some other unpleasant characteristic, but failed to show that he was a thief, then my defense of justification fails, because it is not so broad as the charge

This does not mean that my proof must be in the exact words of the charge, but it means that the defense must be substantially as broad as the charge I hope I have made this clear to you

If the defendants' characterizations of the plaintiff and his business in your opinion are true, on this branch of the case, if the defense has satisfied you by a fair preponderance of the evidence that it has shown the truth to be substantially as broad as the charge, then the defense has succeeded in meeting the libel by justification

On the other hand, if you feel and believe from the evidence that the defendants have not proved the substantial truth of their statements, then this defense fails

The other defense in this case is the defense of qualified privilege There are two kinds of privilege recognized by the laws of this country The first, we are not concerned with in this case, but I will tell you of it by way of illustration A representative in Congress or a United States Senator, a judge upon the bench or a lawyer in the court room may say what he pleases as a part of the proceedings of the House or the proceedings of the Senate or in the Court room, and no person may call him to task That is what we call absolute privilege and it is allowed because we must in such matters have free, full and fair discussion and there must be no limitation upon the opportunity of a man under such circumstances and so situated, to express himself courageously and freely

The defense of qualified privilege, or as it is sometimes called, conditional privilege, is this that any person may discuss a matter of public concern, provided first, that he has not been moved by actual malice, second, that his comment or criticism shall be fair and reasonable That is to say, it must be the kind of comment or criticism, which, under all the circumstances of the case, twelve men like yourselves would say was fair and reasonable

If, in the discussion of a public matter, and in this case I charge you that the American Medical Association in writing the articles about Wine of Cardui was treating a matter of great public concern, if I say in the discussion of a public matter any person publishes of another fair and reasonable comment upon his conduct or business and the publisher is actuated by no element of actual malice, then that publication is privileged, and there may be no recovery whatever because of that publication

Fair and reasonable comment, however, does not include a reckless disregard for the truth or any statement inspired by malice or evil intent

In the event that you find by a preponderance of the evidence that the defendant has not justified or proved its claim of justification, that I say will bring the defendants to their second ground of defense, qualified privilege In that defense, the defendants say in substance that what they wrote and published was a matter of public interest and public concern, that the plaintiff by his advertising invited people to use his medicine, and his system of treatment and that, if the defendants really believed it to be a delusion, they had a right to maintain that it was so, and even if in drawing inferences of bad intention, they fell into error yet, if they wrote honestly and with an intention of exercising their vocation through their magazine fairly and with reasonable moderation and judgment, they would be entitled to a verdict This I believe to be the law

Here the plaintiff challenged public criticism by advertising a medicine and a system of treatment, inviting the public to adopt it as a means of curing many of the most destructive diseases common to women In doing this, I say, it challenged public criticism and if a public writer, using a reasonable degree of temperance and moderation, as behooves anyone who makes imputations upon others, if a public writer thus discussing the subject in the exercise of his vocation, falls into error as to the facts or inferences and goes beyond the limits of strict truth he is nevertheless privileged if he acts in good faith The occasion is a privileged one, and if the privilege is exercised honestly and faithfully, and with reasonable regard to what truth and justice require, then, though he may exceed the limit of what he can legally prove to be the truth, he is protected

It is not therefore necessary in this case that the plea of justification of the truth should appear to be made out if you think the writer of the articles complained of was in the reasonable or honest exercise of his vocation as a public writer, even though he was not fully warranted in drawing the inferences he did as to the conduct of the plaintiff and though it may be that he was not entirely justified by the truth

You must take into consideration the circumstances under which the article was written, the purposes for which the American Medical Association was organized and the character of its work If you believe that the article was written with an honest intention and that the writer believed that the plaintiff's system was delusive and that the medicine had no therapeutic value and that its only active principle was the alcoholic content you are to take all of these things into consideration in making up your mind whether the thing published was justified even if it were not true

If you believe from the evidence that the writer of the article did not write from personal spite or professional malice, but wrote honestly to denounce what he honestly believed a system of quackery and imposture and to do his duty to the public and he believed the things he was writing, then there can be no recovery in this case

The American Medical Association is a corporation not for profit organized and operated in the interest of mankind and for the advancement of the science of medicine and surgery Its publications are many and reach upwards of 75 000 physicians and surgeons No attack has been made on this organization as such and you may assume that it had the right through its Propaganda Department to criticize favorably or unfavorably any method of treatment for diseases by medicine or surgery It must, however, confine itself to legitimate criticism It had the right to advise its doctor subscribers that, in its opinion, Wine of Cardui had no therapeutic value, and that there was nothing potent in it save its alcohol

If this were the case with John A. Patten, which I emphasize to you it is not, complaint might justly have been made that the articles of the defendants overstep the bounds of fair comment and criticism or qualified privilege It was not necessary in the interest of humanity for the defendants to criticize Mr Patten in his church relations But this suit involves purely a business proposition and no consideration may be paid by you to the feelings of the surviving partner, however lacerated they may be, or to the feelings of his family, however keenly his family and relatives may have suffered

The plea of fair comment or qualified privilege will not avail a defendant who is proved to have acted maliciously with a reckless disregard for the truth The burden of proof under a plea of fair comment or qualified privilege is on the plaintiff, and any facts that would go to show malice would tend to rebut the defense of fair comment, or it may be inferred from the terms of the article itself If the right to publish fair comment on a matter of public interest is misused to gratify any indirect or personal motive of the writer, the malice thus shown destroys the defense

There has been no direct evidence offered by the plaintiff in this case showing that the defendants were actuated by malice in publishing the article in question It is for you to determine under all the circumstances in evidence in this case, whether such malice may be inferred from the terms of the articles themselves

The plaintiff is required in every civil case to prove his case by a preponderance of the evidence The defendants when they set up an affirmative defense, such as a plea of justification, have the same obligation This does not mean that they have to prove their case by a greater number of witnesses It means that the evidence must overbalance, even though by a little, on one side, that of the evidence on the other side That is what we call "preponderance"

So far, however, as the defendants affirmative plea is concerned, the plea of justification, it involves a charge of fraud and deceit The law in this case, while it does not require the proof to be made beyond a reasonable doubt, yet it requires you to be satisfied by a clear preponderance of the evidence, that a fraud has been made out, because fraud is never presumed

Under the instructions which I have given you, you will render a verdict for the defendants if you believe from the preponderance of the evidence that this libel was justified and, when I say "preponderance of the evidence," I mean a clear preponderance of the evidence

Or, if under the head of "qualified privilege," you believe from the evidence that the facts complained of in this article of July 18, 1914, constitute, under all the facts and circumstances of the case a fair and reasonable comment or criticism of the plaintiff and his business

Should you think to the contrary, you will render a verdict for the plaintiff for damages, as I will define them, in such an amount as you may deem proper If you believe the defendants have justified in this case, there can be no recovery If you believe the defendants have not justified, then if you believe the articles complained of are fair comment and criticism, in that case the plaintiff cannot recover

If on the other hand you believe the defendants have not justified nor made out their defense of fair comment or privilege, your verdict must be for the plaintiff

You are the sole judges of the credibility of the witnesses and the weight that should be given to their evidence You may take into consideration their interest, if any, in the outcome of the trial, their relation, if any, to the parties, their demeanor while testifying, their frankness and candor while on the witness stand or the contrary as the case may be The fact, if it is a fact, that they have been contradicted or corroborated by other credible evidence or circumstances in evidence and all things considered, you are to determine what weight is to be given to the evidence of each

If you believe from the evidence that any witness has intentionally or knowingly sworn falsely as to any material fact or circumstance, you are at liberty to disregard altogether the evidence of such witness except in so far as it may have been corroborated by other credible evidence or circumstances in evidence

Now, as to the measure of damages Damages which are awarded in libel cases are of three kinds, normal, substantial and vindictive Vindictive damages are sometimes known as punitive or exemplary damages Nominal damages are awarded when the action is a proper one to bring, but the plaintiff has not suffered any substantial monetary damage and does not desire to put the money into his pocket, because of the things written Nominal damages in this jurisdiction amount to one cent

Substantial damages are awarded when the jury honestly endeavors, as men of business, to arrive at a figure which will fairly compensate the plaintiff for the injury which he has in fact sustained

When words used are not libelous per se, that is, when they on their face are not of such a character as the law will presume to be necessarily prejudicial to the plaintiff's reputation, proof must be given to show special damages resulting from their publication But when the words used are libelous per se, that it, when on their face they clearly must have injured the plaintiff's reputation, or in the case of a partnership, the business or business reputation of such parties, a substantial amount may be recovered without giving any evidence of actual pecuniary loss The reason of this rule is that while it is apparent that the libelous words must necessarily injure one's reputation or business, yet it is often impossible for the person libeled to prove even the approximate amount of damages suffered by him, and the law therefore leaves the matter to the reasonable discretion of the jury to fix what they may believe to be just compensation after giving due consideration to all the facts and circumstances proven

The case now before you is one that is being prosecuted by Z C Patten, Jr, as surviving partner in the firm of John A Patten and Z C Patten, Jr, who were doing business under the firm name of the Chattanooga Medicine Company

When libelous words have been published with reference to a partnership business, an action may be maintained for such publication by the partners jointly to recover damages measured by the rules stated Furthermore, if there be published of one member of a firm, libelous words of such character that they reflect on the credit and the integrity of the firm and naturally affect the firm's business, a joint action may be maintained by the partners to recover damages suffered by the firm

It is also the law that when a publication as to a firm's business or one or more members of the firm is libelous per se, that is, that it is of such a character as to naturally injure the firm's business, substantial damages may be recovered in a joint action by the partners without their proving specific damages In such a case punitive damages may also be recovered if the facts be such as justify the awarding of such damages under the principles hereinbefore stated

But in this case, in determining the amount of actual damage which Z C Patten is entitled to recover you must keep in mind the distinction between the damage which John A Patten in his individual capacity could have recovered had he lived, and those which the firm alone is entitled to have awarded them in this case, if any You cannot in this case award any damages for any mental anxiety or suffering endured by John A Patten or by Z C Patten, Jr, in consequence of the publication of the articles in question, nor for any effect the libelous words may have had upon the standing of John A Patten in the Methodist Episcopal Church, or upon his relationship thereto, or for any effect that they may have had on any private business carried on by either of the partners of the firm

But you should take into consideration the character of the charges published by the defendants both about the business in which the firm is engaged and either of the partners personally and if those parts of the articles which refer to either of the partners individually are of such a character that they reflect upon their integrity in connection with the business prosecuted by the plaintiffs, and therefore upon the firm's standing and business integrity, then such charges should be looked into in estimating damages as well as those relating to the firm and its business

In certain cases the jury is permitted to award punitive or exemplary damages in their desire to signify their sense of the defendant's conduct by fining him to a certain extent, and therefore punish him by awarding smart money or a sum in excess of what would be adequate compensation for the injury of plaintiff's reputation It is sometimes stated that a jury may, in addition to compensatory damages against a defendant, by way of punishing him, and as an example to others, assess such damages as in their sound judgment, under all the evidence in the case, they believe he ought to pay

But this doctrine of punitive damages requires on the part of the jury a high degree of watchfulness to prevent it from being perverted and from being extended beyond the real principle on which it is based by allowing the plaintiff to characterize the acts of the defendant with a degree of enormity and turpitude which the law does not affix to them and demand punishment for fictitious offenses and thereby put money in his own pocket under the guise of protecting society Exemplary damages or punitive damages may be allowed by a jury in actions for libel when, on a consideration of all the facts and circumstances of the case, they find that the publication has been made with a reckless disregard of the rights and feelings of the persons libeled as well as where they find that it has been inspired by hatred or ill will towards or an intent to injure him

I will give you two forms of verdict If you find for the defendants, you will sign the form which reads "We, the Jury, find the defendants not guilty" If you find for the plaintiff, you will sign a form which reads, "We, the Jury, find for the plaintiff and assess his damages in the sum of" —— blank dollars, filling in such sum as you may be satisfied under all the circumstances of this case, will make adequate compensation

Are there any suggestions, gentlemen?

Mr Hough —We except to that part of your Honor's charge which relates to the release

The Court —Yes, that will be noted

Mr Hough —And which states that there was no violation of the terms of their agreement as set up in the replication in connection with their *rejoinder*

The Court —Every point that may be urged against the Court's striking out the first count will be preserved in the record

Mr Hough —Then we object to your Honor's charge with reference to qualified privilege in view of your Honor's action on demurrer to a plea of that kind and we particularly object to your Honor's failing to tell the jury that there can be no qualified privilege or fair comment except upon matters which are proven There can never be a comment which is fair or a qualified privilege upon a matter which is in dispute, nor can there be a fair comment or privilege with reference to an attack on the character as distinguished from an attack on the thing itself We think that is the law also

The Court —I explained to the jury that every finding they make must be based upon the evidence That was in the general charge

Mr Hough —Now we wish to except further to your Honor's statement that there was no evidence of good faith or want of malice, without drawing the jury's attention to the fact that the republication, the reprinting and the circularizing are of themselves evidence of malice

The Court —I intended to direct the jury's attention to that point when I said that they may take into consideration the articles and all of the articles that have been written and all of the evidence in the case and make up their minds whether from all the circumstances, there was malice

Mr Hough —Now, your Honor, we except to that part of the charge, which refers in connection—we are objecting generally to everything you have said about fair comment and I want to point out the things, if I can recollect from the charge what they are—that they could consider whether this was done in good faith and it was fair comment and without malice We contend that they cannot consider that when the defendants did not put a word of evidence before the jury to show that they did it in good faith and were without malice

The Court —That position would be quite sound if the matter of fair comment and privilege must be brought to the attention of the Court by special plea, but so long as it must be shown or may be shown, under the general issue, I am of the opinion that it is for the plaintiffs to prove the malice So that point will be saved

Mr Hough —Then there was one other addition to your Honor's instructions which we would like to have your Honor consider as to whether you should not give it in connection with the charge

(The instruction proposed by counsel for plaintiff is in the words following)

"In giving you the instructions I have given you gentlemen,
"upon the question of fair comment or criticism, it is proper for
"me to instruct you that under the pleadings in this case you
"cannot consider this question at all except upon the measure of
"the damages to be awarded for the plea of the general issue
"(the publication of the articles being undisputed) admits the
"falsity of the charges complained of and thus admits the right
"of the plaintiff to recover some amount, the amount which you
"might otherwise find to be mitigated or lessened only to such
"extent as you in the exercise of your sound discretion may deem
"right and proper, if you should find as a matter of fact that the
"libelous matter complained of, or any substantial part of it, can
"be fairly said to be fair comment or criticism"

THE COURT —I am inclined to think that I can give this to the jury, but to save extended argument on it here in the presence of the jury, I will show this to Mr Scofield just to see if he has any suggestion to make before I give it We don't want to get any error on the question of damages

Mr Hough —Then I wish to also take exception to your Honor's statement that there was any burden on us to prove actual malice

THE COURT —That may be done

Mr Hough —And to the failure of your Honor to charge that the last paragraph, to the effect that shame should be brought into partnership with the man—

THE COURT —If I have overlooked that in the article of July 18, the jury should be told that that is libelous per se

Mr Hough —I think so, yes

THE COURT —Have you the article there so I may read it to the jury? I perhaps dropped into error because I took the things I call libelous per se from your statement

Mr Walker —It is there on page 17 of our suggestions at the bottom of that first column on the left hand side

THE COURT —Gentlemen of the jury, you may understand that I regard this portion of the article of July 18 as libelous per se as well as the others to which I have called your attention

> The law may better conditions in some respects but whether it is bad booze or poisonous patent medicines that are dispensed, the only way really to accomplish anything is to bring shame into partnership with the man who makes money out of it

Mr Walker —There is one point more In your statement of responsibility, you said something about actual malice in the writer Actual malice may be established by the repetition of the article and by the continual assertion of its truth under the plea of justification up to the very finish of the case, which they have done here

THE COURT —The jury may understand that the repetition of the article or the substance of it is evidence which they are to consider in arriving at the verdict on the question of malice

Mr Walker —The repetition and the continual argument or its truth to the final finish of the case is an element as to whether they had actual malice

THE COURT —And the jury may so consider that I want the jury to consider further that when I used the words "writer" and "publisher," that I regarded the writer and publisher here as one and when I referred to one, I referred to the other as well I did not mean to distinguish between some editorial writer who wrote the article and the journal or magazine which published it

Mr Walker —If by continuance of repetition there be actual malice, malice of the writer or publisher is malice of the Association

THE COURT —There is no question about that If you find that there was malice in this case, it makes no difference whether it was malice on the part of the writer who wrote the article, or by the Medical Association that sent out the article through its Propaganda Department

Mr Loesch —We except to that portion of your Honor's charge

Mr Walker —Just one moment I wish to take an exception to your Honor's failing to instruct the jury to leave it as an issue of fact that on those things that you have said were libelous per se we had a right to recover and they should have been instructed on those things that you said were libelous per se, to render a verdict for the plaintiff

THE COURT —On all of those matters that I have characterized as libelous per se there must be a verdict for the plaintiff unless you find that the plaintiff (a misstatement for defendants) has justified and proved the truth or the substantial truth of those things or unless you find that under the law of fair comment and privilege as I have given it to you, they have acted only within their privilege

Mr Walker —Your Honor used the word "plaintiff" instead of 'defendant"

THE COURT —I should have said that the plaintiff is entitled to recover

Mr Hough —One other point upon which I think your Honor should have charged the jury, and that was the question as to the fact of the worthlessness of the medicine being a matter of opinion

THE COURT —No, you may save that point I gave that very serious consideration

Mr Loesch —The only point, your Honor, that we have is that you told the jury that we must prove the justification by a clear preponderance of the evidence

THE COURT —You may save that point

Mr Loesch —We except to that

Mr Charles J Scofield —(Referring to suggestion for instruction tendered by plaintiff, and hereinbefore set out in full) We object to that

THE COURT —I would like to have you state briefly your objection

Mr Charles J Scofield —Our objection is that that practically tells them that the defense of fair comment is not before the jury under the general issue That tells them in effect that there is no evidence on fair comment under the general issue before the jury

THE COURT —It is perfectly well settled that you cannot make proof in mitigation of damages where you have a plea of justification

Mr Hough —Nor can any of the facts offered in support of the truth under the plea of justification, be considered—

THE COURT —Under the law as I conceive it to be—

Mr Hough —I just want to finish the statement—cannot be considered in mitigation of damages

THE COURT —Under the law as I conceive it to be, the defense of fair comment and privilege, qualified privilege, is just what it means It is a defense and not something that goes to permitting the plaintiff to recover only in mitigation of damages The reporter may copy this as having been asked of the Court to give the jury and refused and you may preserve the exception

Mr Hough —May we consider that the requests which we made of the Court which were not given—

THE COURT —I could not do it I did not have time There were something like 200 pages all told handed up to me by counsel It was absolutely out of the question

Mr Charles J Scofield —We have a great many, but we are not asking them of your Honor

Mr Hough —We wish to save an exception to your Honor's failing to instruct the jury or rather that on the points upon which they did not justify there should be an instructed verdict for the plaintiff

THE COURT —Yes, you may save that

Mr Williams —I do not want to tax your patience, but I prepared that little instruction requesting that the—

THE COURT —This substantially says, Mr Williams, that notwithstanding the jury might be of the opinion that the article was written under the privilege of fair comment and criticism, nevertheless there must be a verdict for the plaintiff and this goes only to the amount of damages

Mr Williams —The theory of it was based on the O'Malley case where it said or where they made the criticism that if came under the plea of general issue which admitted the falsity of the charge and where they then plead in mitigation That is held in that case

Mr Charles J Scofield —We have got an abundance of authority to sustain our position

THE COURT —Gentlemen of the jury, as my distinguished associate has frequently said, when you go into your jury room, don't leave your common sense behind Remember that this is a business proposition You are twelve men coming from different walks of life and each one of you looks at things from a little different angle I undertake to say that if you will take your common sense into the jury room with you, that the composite picture which you get of this evidence will result in a verdict which will be a substantially correct verdict Now the exhibits, gentlemen, you can arrange with the bailiff, for all the exhibits ought to go into the jury room

WINE OF CARDUI SUIT

(Continued from page 2113)

May 15, 1916, Afternoon

TESTIMONY OF DR FRANCIS E THORNTON

The Court met pursuant to adjournment Dr Francis E Thornton was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR HOUGH

Dr Thornton testified that he is a physician and has practiced in Chicago for 28 years He graduated from the Bennett College of Eclectic Medicine and Surgery He was ten years on the staff of the Frances E Willard Hospital, 14 years on the Cook County Hospital staff, 6 years with the Norwegian Tabetha Hospital, and 5 years on the Norwegian Deaconess' Hospital staff He taught physiology in the Bennett Medical College for six years, diseases of children for two years in the Bennett Medical College, and internal medicine in the Bennett Medical College and Chicago College of Medicine and Surgery for eight years He does general practice, the greater percentage of his work being the diseases of women and children He does only minor surgery He believes that during his practice of 28 years he has treated 30,000 to 40,000 women for female diseases covering the entire range of female troubles from puberty to the menopause, including pregnancy He testified that he has had over 4,000 cases of pregnancy and has used viburnum prunifolium in his practice in all cases of diseases of women He has used carduus benedictus for diseases of women for about 20 years

The witness stated that viburnum prunifolium has been one of the principal remedies that he has used in the treatment of diseases of women Carduus benedictus is frequently indicated for female troubles He believes that the effect of combining the action of these two drugs would be to produce a synergistic action and it would take less of each drug to produce the desired results The smallest dose of viburnum prunifolium which he has used in his practice is three drops of the fluidextract or of the specific tincture which would represent a grain for a drop

The smallest amount of carduus benedictus which he has used is one tenth of a drop or one tenth of a grain and he has obtained results He would give them every half hour in fluidextract He does not believe that the effect was due to the alcohol

Q —Have you an extensive practice in Chicago now? *A* —I would rather somebody else would say that I know I pay a good deal more income tax than I would like to

Q —On an average, how many patients do you see a day? *A* —From 20 to 40

Q —Of those patients, how many of them would be on an average women or girls with some female troubles? *A* —Two thirds of them

Q —*Two thirds of them?* *A* —Yes, sir

Dr Thornton testified that he is familiar with symptoms of amenorrhea, menorrhagia, dysmenorrhea and metrorrhagia When cases came to him that required surgical treatment, he refers them to a surgeon Eighty per cent of his women patients are treated medically He stated that he was familiar with displacements of the uterus and with dynamics of the female pelvis and with prolapsus, that there are cases of uterine displacements that may be cured by hygienic measures and medicine Under certain conditions carduus benedictus and viburnum prunifolium would be indicated for these conditions

Q —Would those medicines doctor, be indicated for vaginitis, when not produced by malformation, or which did not require surgical treatment? *A* —That would depend upon the cause

Q —Dependent upon the cause? *A* —Yes, sir

Q —Are there any cases in which they would be indicated? *A* —Yes, sir

Q —What class of cases would they be indicated in? *A* —Why, in cases that were not due to malignancy or specific causes

Q —What would you say are specific causes? *A* —Well, gonorrhea

Q —In your school, do you treat causes or symptoms? *A* —Symptoms I would like to make a difference there We treat the indication, a group of symptoms may produce an indication It may be one symptom alone

Q —Then you mean you treat either the symptom or the group, which means the indication? *A* —We treat the indication

Q —Doctor, is there any medicine which is regarded as indicated treatment for the *inflammation* due to gonorrhea? *A* —Well, it would depend upon the indication in gonorrhea, as in any other disease

Q —Are there any circumstances under which medicine would be indicated? *A* —*In the treatment of gonorrhea?*

Q —In the treatment of inflammation, which might have gonorrheal origin *A* —Yes, sir

Q —Would those medicines contain alcohol? *A* —They may Many prescriptions for the purpose do contain alcohol Montgomery gives one in his textbook

Q —Who? *A* —Montgomery

Mr T J Scofield —That is objected to

(The latter part of the answer was then read)

The Court —Strike it out

Mr Hough —That, as I understand, if the Court please, is already in evidence, that prescription

The Court —It was volunteered by this witness If it is in, it is in

To which ruling of the Court the plaintiff etc, excepted

Mr Hough *Q* —Do you know of any such prescription in any textbooks?

Mr T J Scofield —That is objected to as immaterial

The Court —The objection is sustained

To which ruling of the Court the plaintiff, etc, excepted

The Court —If that question were put, we could put the entire medical library of the country in It may be that I am wrong here

Mr Hough —Your Honor ruled in the beginning of the trial—

The Court —In cross-examination, I can see very well that it is improper to call the witness' attention to medical works unless he says he relies upon those books and makes them the basis of his answer

Mr Hough —That is proper cross-examination Now, whether in direct examination you can ask a witness about it, I am not so sure, because you have the book to produce, if it is in the book The book is perhaps better evidence than the witness who is merely quoting the book as hearsay

Mr Hough —Does your Honor hold then that, without asking the question, we are entitled to read from the book?

The Court —I am not holding at this time that you are entitled to introduce the book, but the book is certainly better evidence than what the witness says on direct examination

Mr Hough —Well, under some circumstances I can conceive that the witness—

The Court —In other words, if it is competent in the book, the book must be produced If it is not competent in the book, clearly it is not competent here

Mr Hough —Except as indicating what the general practice is

The Court —Well, I am not sure that it does

Mr Hough —Well, except as to the question of the extent

The Court —No, I think at this time I will sustain the objection

To which ruling of the Court the plaintiff, etc, excepted

Mr Hough *Q* —Doctor, in those cases where a medicine containing alcohol is given for inflammations of the vagina which may have their origin in gonorrheal infection, what is the effect of the alcohol in those medicines? *A* —It is nil

Q —Is it so generally considered?

Mr T J Scofield —Wait a moment, I object to that, if the Court please

The Court —He may give his own opinion

Mr T J Scofield —Well, I don't object to that

A —I think so

Dr Thornton stated that medicines containing alcohol are given to young girls at puberty and that in medicinal doses the alcohol has no effect, that they are given to women at the menopause and the alcohol, in medicinal doses, has no effect He stated that medicines are given during pregnancy as uterine tonics to make labor easier and that viburnum prunifolium and carduus benedictus are such drugs The witness stated that he would not consider that uterine tonics or sedatives which contained in each dose as much as 48 drops of alcohol had a deleterious effect when taken two to four times a day according to dosage He believes that such an amount of alcohol would produce no alcoholic habit nor would it have any effect in producing sexual desire

Q —Doctor would you say that a medicine composed of 30 grains of carduus benedictus and three grains of viburnum prunifolium (or the extractives from them) per dose, in a menstruum of 20 per cent alcohol, would be indicated generally for menstrual disturbances of women such as irregularity, exaggeration and suppression? *A* —The latter part of the question? Indicated generally?

Q —Yes *A* —Well, I would not say that it would be indicated generally It might be indicated in the treatment of those troubles

Q —Well, would you say it would be indicated? *A* —Yes

Q —For menstrual disorders of women, such as irregularity, exaggeration and suppression? *A* —Yes sir

He believes that such a medicine might be indicated for uterine and ovarian troubles not requiring surgical treatment, and might be indicated for use during pregnancy, at puberty, and at the change of life

The witness stated that in the treatment of vaginitis it is important to keep the bowels open and very important to take antiseptic douches, that under certain conditions carduus benedictus and viburnum prunifolium in the amounts indicated together with antiseptic douches *and medicine* to regulate the liver, would be indicated for vaginitis

Q—Would you say that such a medicine could act upon the cause of the disease and have a curative effect upon the seat of the trouble? *A*—The question is too general

Q—What is that? *A*—I say the question is too general On the cause of the disease—it might be one of a hundred Certain conditions it would act and others it would not

Q—You mean vaginitis might be due to a large number of causes? *A*—Yes sir

Q—And whether the medicine would be good would depend upon the causes? *A*—To a great extent

Q—Suppose the vaginitis had been due to an unhealthy discharge from the womb ovaries tubes or bladder, would such a medicine be indicated? *A*—Under certain conditions

Q—Suppose the vaginitis was of gonorrheal infection—or origin rather would such a medicine ever be indicated? *A*—It might

Q—Doctor, do you regard displacements such as anteflexion and anteversion and retroversion as being pathological where there are no *uncomfortable symptoms suggesting those conditions to the woman?* *A*—Well a strict interpretation of the word pathological would indicate that

Q—Well would you say that that condition would require treatment, if there were no symptoms or group of symptoms? *A*—It would depend upon the amount of deviation from the normal You might have a slight deviation that would require no treatment. To any great extent, it would require treatment

Q—If it was to a great extent, would there not be symptoms? *A*—Not necessarily

Q—Could that be ascertained without a physical examination? *A*—Yes sir

Q—How would you ascertain that? *A*—When there were no symptoms?

Q—Yes *A*—No you could not determine that without examination

Q—Did you say that medicine will cure some of those displacements or rather the symptoms which accompany them? *A*—Yes sir

Q—Would these medicines which you have named be indicated for such conditions? *A*—In some of those cases yes sir

Q—Have cases of prolapsus of the womb been cured by medicine without any *surgical operation?* *A*—Yes *but with the* use of the hygienic measures and as to diet and the patient s position

Q—And medicine to keep the bowels open? *A*—Yes sir

Q—Would this medicine we have been talking about be indicated for that condition? *A*—In some cases

The witness stated that inversion of the womb is a rare condition He has seen only one case in 28 years Whether operation was indicated would depend on how recently the inversion had occurred If it was of recent occurrence, operation is the proper treatment, if of long occurrence it is best to let the person become adjusted to it The use of such a medicine as discussed is sometimes indicated in those conditions, such a medicine is indicated for inflammation of the womb

The witness stated that it might be indicated in certain cases of sterility, and in cases of threatened abortion it is one of the best remedies that we have, that the hypothetic medicine composed of 30 grains of carduus benedictus or the extractives of 30 grains, and three grains of viburnum prunifolium or their extractives, per dose, in a menstruum of aqueous solution of 20 per cent alcohol might be indicated for leukorrhea

The witness stated that there is a connection between the breasts and the female generative organs through the sympathetic nervous system He stated that the appearance of the breasts might be suggestive of disease in the female generative organs If the disease is properly treated it is reflected in the breasts

Q—In what way? *A*—Well as the general nutrition of the body comes up after getting rid of the pathological condition of the pelvis the breasts will begin to fill up and assume their normal shape

Q—Doctor is there such a thing as a scientific and specific remedy for any of these conditions? *A*—Well to what *conditions do you refer?*

Q—These female troubles or any of them? *A*—No there is no specific for all of them

Q—Well would you say that there is a scientific and specific remedy having a curative effect? *A*—Yes sir

Q—Doctor can a woman who has a headache or pain in the side or back ever tell that that is due to some menstrual disturbance? *A*—Yes sir

Q—Under what circumstances? *A*—Why when she has it repeated over and over month after month the occurrence of the headache and pain in the back and side coming on just before or at her *menstrual* period.

Q—Doctor can the mere fact that a drug is injected into the uterus either inside or outside of the human body, without having any apparent effect upon it, in ten minutes indicate that that medicine would have no effect upon the womb if given in the regular way through the mouth? *A*—No sir

Q—Would the mere fact that a drug injected in the body of an animal makes no changes either in respiration, pulse or circulation indicate that that medicine was worthless for any womb troubles? *A*—No sir

Q—Doctor what is a medicinal tonic? *A*—A medicinal tonic is one that improves the vitality or raises the vitality of the body or of any specific organ *of the body*

Q—May a medicine be both a tonic and a sedative? *A*—It may

Q—What is the difference between a tonic and a stimulant? *A*—A tonic raises the vitality of the part or the body to its normal condition A stimulant produces an overaction of the part of the body

Q—Are there different kinds of tonics? *A*—Yes sir

Q—Is there such a thing as a general tonic? *A*—Yes sir

Q—Is there such a thing as a uterine tonic? *A*—Yes, sir

Q—Are carduus benedictus and viburnum prunifolium known as uterine tonics? *A*—Yes sir

Q—What is the difference between a general tonic and a uterine tonic? *A*—A general tonic exercises its influence on the whole body and a uterine tonic more specifically upon the uterus

Q—May a medicine be at the same time both a general tonic and a uterine tonic? *A*—Yes, sir

The witness described the condition known as anemia He stated that the drugs mentioned might do good in a general way as a systemic tonic He stated that if anemia is cured, menstruation is sometimes established and sometimes not Frequently, uterine tonics or ovarian stimulants are required to produce menstruation He stated that every case of puberty is accompanied by symptoms A small percentage requires some treatment When all the symptoms of puberty have occurred and menstruation did not come, treatment would be required He believes that in one of a hundred cases there is dysmenorrhea during puberty

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that the 20 per cent alcoholic menstruum will extract the resins from viburnum prunifolium The witness uses specific medicines, and the amount of alcohol used to extract the resins from viburnum prunifolium may vary from 48 per cent to 64 per cent. The amount necessary to extract the virtues depends on the herb To get all the virtues of carduus benedictus, from 70 to 78 per cent of alcohol is required The medicines are not indicated in all cases of amenorrhea The same applies to metrorrhagia, menorrhagia, and dysmenorrhea He does not refer altogether to surgical cases Amenorrhea is sometimes a surgical condition, for example, where there might be affection of the tubes or ovaries or cellulitis Medicine would be indicated in causes of profound anemia It would make a difference as to what the anemia was due to You would first have to find out the underlying cause and cure it

The medicine described by Mr Hough would not be indicated in any case of profound anemia The witness stated that menorrhagia is sometimes due to uterine polypi He has treated a good many cases of uterine polypi with viburnum prunifolium The medicine described by Mr Hough might be indicated for uterine polypi when there was a contraction of the uterus with a great deal of pelvic congestion, or varicosity with pelvic congestion He would determine by examination of the patient He stated that in treating the patients he first diagnosed the condition by making an examination and then prescribed He would not prescribe until he had done that He would not say that the medicine was useful in all cases of flooding He would not consider this medicine a proper scientific treatment in all cases of menorrhagia

REDIRECT EXAMINATION BY MR. HOUGH

The witness stated that under certain conditions, the addition of alkali to alcohol increased the extractive power He stated that there was occasionally a case where one might prescribe without making a physical examination

The witness stated that when any dispensatory speaks of any 30 grains of a drug it means the extractives from those 30 grains

DEPOSITIONS*

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* The plaintiff—The Chattanooga Medicine Co—presented some 498 depositions about 166 being made by physicians About 115 were read to the jury the counsel for both sides agreed that the remainder should be considered as in evidence Some of the depositions will be abstracted later

May 16, 1916, Morning

TESTIMONY OF DR WALTER FRANZ VON ZELINSKI

The Court met pursuant to adjournment Dr von Zelinski was called as a witness on behalf of the plaintiff in rebuttal

DIRECT EXAMINATION BY MR WALKER

Dr von Zelinski testified that he is a physician practicing in Chicago He graduated from the Bennett Medical College in 1908 and from the Central States College of Pharmacy and attended St Ignatius College He is a lecturer on Materia Medica in the department of Pharmacy at Loyola University and instructor of clinical medicine at the Bennett Medical College He has been connected with the Loyola University as a teacher since 1909 He is a member of the Chicago Medical Society, the Illinois State Medical Society, the German Medical Society of Chicago, the Tri-State Medical State Society of Illinois, Iowa and Missouri, the Association of Military Surgeons and the American Medical Association He has treated the diseases of women from puberty to menopause He also does surgery He testified that he has treated thousands of women of all nationalities He used to hold clinics in the medical school He stated that there seems to be an intimate relation between the ovaries and the breasts and diseased conditions of the pelvis manifest symptoms in the breasts He has operated on conditions in which operation would give relief He has removed the uterus and the ovaries He considers retroversions, retroflexions, etc, pathologic in so far as they are deviations from the normal, but it does not necessarily follow that they give rise to symptoms always The symptoms are the expression of the disease There may be displacements of the uterus

He stated that medicines are practically always indicated in pelvic diseases of women There are many cases of inflammation where surgical treatment is not required The witness defined endometritis and metritis and vaginitis He stated that these conditions might be treated by medicines given through the mouth and are not all surgical cases He would say that 5 per cent required surgical treatment All the others are treated medically

Q —Doctor, what is a tonic? *A* —Well, a tonic as I understand it, is a medicine which so acts upon the system or the organs, as to cause it to perform its function in a nearly normal manner

Q —Are there general tonics? *A* —Yes, sir

Q —Are there tonics that act particularly on any given organ? *A* —Yes, sir, there are general and special tonics

Q —What do you mean by special tonics? *A* —I mean a tonic which influences certain of the organs in the human body

Q —How do those tonics act, what is the method by which they act? *A* —Well, you mean the general or the special?

Q —First, how are they taken? *A* —Well, they are taken by mouth, or they may be injected under the skin

Q —Take those that are taken by mouth, will you tell the jury, both as a general and special tonic, how they act and how they act on the particular organ so far as you observed it, or understand it *A* —Well, a general tonic may cause an increase in the appetite and act indirectly The patient, through taking more food, is built up, is improved, his blood is improved and certain forms of blood infections may be overcome, mild or severe, and that improves the patient in a general way

Q —Now, where they act specially, doctor, how do they act? *A* —Well, specially, you would use a uterine tonic or a heart tonic, or a liver tonic so called

Q —What do you mean by a uterine tonic? *A* —Well, I mean by a uterine tonic, a medicine which has an effect upon the uterus especially

Q —What do you call that, if you have any name, a medicine that contracts a given muscle? *A* —Well, I would refer to such a medicine as a stimulant

Q —What is pituitrin? *A* —Pituitrin is the extract of a gland found in the brain, and it is used as a stimulant of the uterus

Q —Do you consider pituitrin a tonic or a stimulant? *A* —No, I consider it a stimulant

Q —Would you expect the like action of the tonic on the uterus, that you would find from an observation of pituitrin? *A* —Would I compare them?

Q —Yes, would you expect a like action? *A* —No, because a tonic may be a sedative at times and may act as a sedative, while a stimulant of course always stimulates and produces more action than it really requires, an overaction, as it were

The witness is familiar with carduus benedictus and viburnum prunifolium, through reading and practical experience He has used both carduus benedictus and viburnum prunifolium for eight years He has used them to relieve symptoms of female diseases He used carduus benedictus as specific medicine, *Cnicus* Benedictus, a preparation made in Cincinnati It contains from 60 per cent to 70 per cent of alcohol He considers it a fluidextract He has also used an extract made by Parke-Davis & Company and also a preparation made by Sharpe and Dohme He has used the fluidextract and tincture of viburnum In the fluidextract, he believes that there was 45 to 55 per cent of alcohol He sees no reason why these two drugs should not properly be used in combination By synergistic action, he understands that the two drugs together have better action than either one alone He believes that carduus benedictus and viburnum prunifolium act in the same way He considers viburnum prunifolium more of a special tonic with its more particular effect on the uterus, while he looks on carduus benedictus as being more of a general tonic with possibly an effect on the female genitalia He stated that practically all of the tinctures and fluidextracts in all of the pharmacopeias, all over the world, with one or two exceptions, are made with alcohol and water There are perhaps thousands of such tinctures and fluidextracts

Q —In giving carduus benedictus as you have described it, or viburnum prunifolium in the liquid form, what consideration, doctor, if any, did you give to the alcohol content of those medicines? *A* —I did not consider the alcohol at all

Q —Well, why not? *A* —Well, because the alcohol is the best solvent to extract the virtues of the drug, and it is a necessary element and the effect of the drug so far overshadows any effect that the alcohol may have, that you pay no attention to it Then, aside from that, it preserves your drug

Q —Now, do you know the medicine known as Wine of Cardui? *A* —Yes, sir

Q —Assume, doctor, that the medicine, Wine of Cardui, contains the extractives of 60 grains of carduus benedictus, and of six grains of viburnum prunifolium, in a solution of 20 per cent alcohol, to the fluidounce, and that the dose is the extractives of 30 grains of the one and three grains of the other in 20 per cent alcohol State whether or not, in your opinion, such a medicine given four times a day, would produce in women, young girls or women at the time of the menopause, an alcoholic habit? *A* —No, it is absurd

Q —Will you tell the jury why not? *A* —Why, because the amount of alcohol is completely oxidized

Q —What do you mean by that? *A* —I mean that it is completely—it goes through a complete process of combustion in the human body There is no accumulation, or toxic effect

Q —In taking it that way, would there be any cumulative effect or any desire created? *A* —Well, not unless—

Q —I mean, of the alcohol, doctor *A* —Would there be an accumulative effect?

Q —Of the alcohol *A* —No

The witness stated as his opinion that viburnum prunifolium is a very good uterine tonic and carduus benedictus a general tonic, and he believes that he has had results from it in special cases, in which the symptoms were referable to female genitalia

Q —Doctor, in treating diseases, as for suppression, irregularity, or exaggeration, in reference to the menstruation of women or girls where surgical operations are not necessary, what would be a proper method of treatment? *A* —Well, of course, that would depend upon the cause of the—

Q —Well, take, say, a case of endometritis *A* —Well, that would also depend upon the cause and the symptoms manifested The treatment, as a general thing (say that it was not surgical), would be general and local

Q —What would the general treatment be, and what would the local treatment be? *A* —Well, you would aim to relieve any local condition by applications, direct applications, douches and tampons, and improving the—the general treatment would be to improve the hygiene, recommend a good nourishing and easily digestible diet and give them such medicines as might be indicated by the symptoms If there was lack of appetite, something to promote the appetite, if there was anemia, something to act upon the blood and increase the number of red blood corpuscles You might give them a special treatment, if you located a definite infection You might treat them with vaccines, or bacterins

Q —Assuming that it was a malignant infection Take a case where there was an inflammation, endometritis, and medicines were the method of treatment without the injection of the serums What sort of medicines would be given? *A* —Well, that would—as a rule the medicines are required to act upon the uterus and general functions and of course the improving of the hygiene, and recommending of certain special diets and local applications

Q —From what you know of the two medicines—speak louder, doctor *A* —Yes, sir

Q —From what you know of the two medicines, carduus benedictus, and viburnum prunifolium, would they be indicated in cases of that character? *A* —They could be used in those cases, yes, sir

Q —You are familiar, of course, with amenorrhea, menorrhagia, and all those, flooding and painful menstruation—without repeating the names of them *A* —Yes, sir

Q —State whether or not the Wine of Cardui that I have spoken of, with the dosages named, state whether or not that would be a proper medicine to give to a young girl, suffering from dysmenorrhea at the time of puberty, where there was no malformation or misplacement of the uterus *A* —You mean what would be the effect of this medicine?

Q.—Yes. *A*.—Well I consider it a mild harmless tonic. Of course whether it would have any effect depends upon the cause but you could use a preparation of that sort because very often there is a condition of debility there which requires a tonic there. There is a painful condition reflex pain of various sorts that have their origin in the uterus, in which you could use the viburnum for its sedative tonic effect.

Q.—In your experience how many girls whose puberty or menses are establishing themselves at the time of puberty would you say suffer pain and disagreeable feelings at the time of the monthly period? *A*.—Oh I would say 90 per cent. of them.

Q.—Would the medicine such as Wine of Cardui—

Mr. T. J. Scofield.—What was that? What was that question?

Mr. Walker.—He says 90 per cent. of them.

Mr. T. J. Scofield.—But what was the question?

Mr. Walker.—That young girls at the time of menstruation suffered pain and disagreeable symptoms.

Q.—I mean have symptoms of distress and pain is that what your answer had reference to? *A*.—Yes sir.

Q.—Now could medicines containing alcohol tonics be a legitimate medicine to give for any such conditions of suffering? *A*.—How much alcohol?

Q.—Well as prescribed in the dose named of Wine of Cardui that I spoke of a while ago 48 drops of alcohol to the dose? *A*.—A medicine like that could be used without any harmful effect. It might do them some good.

Q.—Doctor take a medicine of that kind, would you refrain from its use on account of the alcoholic content, in a young girl? *A*.—Not at all. In fact I might use it because of that amount of alcohol.

Q.—State whether or not in your opinion that would tend to create an alcoholic habit in a girl at the time of puberty? *A*.—Not at all.

Q.—Or state whether or not in your opinion it would increase her passions at that particular time? *A*.—No, sir not any more than the condition itself would.

Q.—Would it enhance anything or increase the condition? *A*.—No sir.

Q.—Now while I am on that subject doctor, I will ask you in reference to the time of a woman's menopause. Are you familiar with the disease known as cancer? *A*.—Yes sir.

Q.—State whether or not in your opinion the taking of the medicine Wine of Cardui in the dosages that I have already given you say three or four times a day would in your opinion tend to mask the cancer if the cancer was present? *A*.—Certainly not.

Q.—Will you tell why? *A*.—Well because when the cancer produces symptoms locally or general even that is manifests itself by pain or local discharges why so far as a medicine like that masking the symptoms is a good deal like putting water on a duck's back because the pain—oftentimes it demands tremendous doses of *narcotics* to relieve them and the local conditions such as the discharge—it would have no effect on them whatever.

Q.—Mr. Fowler wants me to ask this. Mr. Fowler wants to know if you deem that an operation can cure cancer after it is there after there is cancer? *A*.—Well if it is discovered in time you can get at it practically before the symptoms marked symptoms have set in. I don't believe that it is hardly curable when marked symptoms have set in if they are there to any extent.

The witness stated that he has had experience with pregnancy, that medicines might be given to relieve symptoms during pregnancy. He has treated cases of uterine displacements medically. He has seen cases where after general and local treatment the uterus has apparently resumed its normal position. He has read the Home Treatment Book of the Chattanooga Medicine Company for 1913. He considers the instructions outlined in that book as being fair treatment. They are reproductions of what you find in the standard works of gynecology. On motion, that portion referring to standard works was stricken out.

The witness mentioned as causes of vaginitis, sexual excesses, infections and as a complication following certain systemic diseases. Discharges from the lining of the uterus cause vaginitis. There was read to the witness a statement from the Home Treatment Book, concerning the causes and treatment of vaginitis. He stated that in a general way it was a useful treatment in such conditions. As far as gonorrhea is concerned it would only be a part of the treatment. He would go much further than that, than the book indicated.

He considers Wine of Cardui together with the treatment mentioned in the Home Treatment Book as a useful treatment in uterine prolapse and displacements. He considers inversion of the uterus an infrequent thing.

Carduus benedictus and viburnum prunifolium would be indicated in some cases of sterility as tonic treatment when there was debility and irritability of the uterus.

The witness testified after objection that the pharmacologic test on a dog or cat or any of the lower animals which did not show a result would not mean anything. He stated that there were many drugs whose value was known clinically before it had been established pharmacologically.

He mentioned as such drugs, cinchona, digitalis and cascara. He stated that we have a good many drugs whose mode of action is not known, while it is known that they have a clinical effect.

Q.—Now doctor suppose a physician operating on a woman who is under anesthesia were to inject into the uterus of such a woman three or four or five teaspoonsful of the medicine Wine of Cardui that I have been speaking of heretofore containing the drugs named in the proportion named, and the uterus showed no signs of action, or nothing was observed as to the action of the drug in the uterus in ten minutes. State whether or not in your opinion—state what in your opinion would be the value of such a test in showing or not showing the usefulness of that drug upon a diseased human being. *A*.—I would consider that a very rotten experiment.

Q.—What do you mean by that? *A*.—I mean by that that you could not prove a thing by that whether it acted or prove that it did not.

Q.—What? *A*.—Because that is an isolated instance and you don't know what the modifying circumstances might have been there.

Q.—Take the same case doctor and assume that after ten minutes had expired in which the Wine of Cardui had been used in that illustration a certain amount of pituitrin had been injected in the same womb and the womb contracted in a short space of time, one or two or three minutes I don't remember which. What would that demonstrate as to Wine of Cardui, if anything? *A*.—I don't see that it would demonstrate anything. If I could explain that—

Q.—Well go ahead why? *A*.—Well we have for instance—we have drugs that we use as a heart tonic. Atropin is one and strychnin is one. I can put some atropin in your eye and dilate your pupil, and if I put strychnin in there it would not do any more than irritate a little bit but they both will have a stimulating effect on the heart when taken by mouth or injected under the skin. They act in different ways.

The witness stated he first learned of carduus benedictus when he was working as a clerk in a pharmacy sixteen years ago. He would look on carduus benedictus as a mild tonic in cases of pregnancy with disturbances. He uses viburnum prunifolium in certain irritable conditions of the uterus when there is a tendency to miscarry. He believes that he had had beneficial results with viburnum prunifolium in amenorrhea.

Q.—Now take cases of dysmenorrhea menorrhagia and amenorrhea would the carduus benedictus be indicated in any of those cases independent of viburnum? *A*.—Yes in some of those cases.

Q.—Now when you combine it with viburnum would you say it would be indicated? *A*.—Yes it would be indicated in that way too.

Q.—Bearing in mind then that the medicine, Wine of Cardui contains both drugs would they be indicated—would that medicine be indicated in those cases? *A*.—Yes it could be used.

Q.—As you have observed them the results in those cases with carduus benedictus—you have answered about viburnum prunifolium—what was your opinion of the use of the medicine as obtaining results? *A*.—Well I have got results in those cases in which I have used carduus benedictus.

Q.—Good results? *A*.—Yes sir.

CROSS-EXAMINATION BY MR. T. J. SCOFIELD

Dr. von Zelinski stated that treatment would depend on the cause of the condition. It would be essential to determine the cause and the treatment would be determined by the cause. You do not treat different causes with the same medicine.

Q.—Well you would not treat the conditions which resulted from the causes either would you by the same medicine? *A*.—Well *in a* good many of these cases of course your patient's vitality becomes lowered, and as a general proposition you use tonics.

Q.—Well I am not asking about tonics. You might use a tonic as a part of your treatment? *A*.—Yes sir.

Q.—But I say depending on the causes you determine to treat and if you felt you wanted to give a tonic too, as a part of it, that would constitute not the entire treatment, but part of it isn't that true? *A*.—Yes sir.

Q.—That is absolutely true is it not, doctor? *A*.—Yes sir it is.

Q.—Now you say in connection with your experience in the practice of medicine you have found that there are many conditions which arise in female troubles and complaints which may be treated medicinally—possibly all of them—and that there are also a certain per cent. of them that require surgery even though you have given them the medicinal treatment is that right? *A*.—Yes sir.

Q.—Now how does your patient learn doctor whether or not the trouble from which she is suffering is one which requires surgical attention? *A*.—How do we determine that?

Q.—No I say how does the patient the woman determine that or ascertain that fact? *A*.—Well as a general rule they have taken medical treatment perhaps for a long time and got no relief and maybe have gone from one doctor to another and surgical intervention may have been advised but they refused it until—

Q.—Now you take yourself when a patient comes to you a woman for treatment for some pelvic trouble which may or may not require surgical treatment depending upon what the condition is how do you determine without any knowledge of previous treatment if any whether or not it is a surgical case or whether it is a medical case? *A*.—Why by obtaining an accurate history of the case and examining the patient.

Q—Now then, when you say examining the patient, you mean a physical or a digital examination? *A*—Yes, sir

Q—In other words, you take the patient's history, what she tells you about it, for what that may be worth— *A*—Yes, sir

Q—and then you would examine the condition of her pelvic—of her pelvis, for the purpose of finding out what the underlying cause of the trouble was, isn't that true? *A*—That is true

Q—And it is *only in that way that* you could determine whether it was a surgical case or not, isn't it, doctor? *A*—Yes, sir

Q—That is the way you determine that question, and if you found, as the result of that examination, that the condition was a surgical case requiring operation, you would recommend that, and if you found it was not a surgical case, if you found what the underlying cause of the trouble was, you would treat it medicinally, isn't that right? *A*—That is right, sir

Q—Yes Now, Doctor, is it not true that a woman who has been suffering from female trouble—which is a pretty general expression, and I suppose covers a wide latitude of ailments and diseases—can such a person tell for herself whether her case *is one* which requires mechanical, surgical or medicinal treatment? *A*—Not always, some times

Q—Well, now, in what proportions—in what class of cases could she tell that, do you think? *A*—Well, she could tell that in certain cases, where the symptoms—

Mr Walker—Won't you speak a little louder, doctor

The Witness—Yes The symptoms—she could tell *by her personal* experience and what she hears from others who recite exactly the same experience

Mr T J Scofield *Q*—Well now, I am not calling attention to any *hearsay matter I am taking a woman* who is suffering from some female trouble of some kind in the pelvis, or arising from some condition in the pelvic organs, and *I* am asking you whether she herself would be able to say whether her condition required mechanical, surgical or medicinal treatment? *A*—Yes, I believe she could

Q—You said a little while ago she could in some cases? *A*—Yes, I—

Q—Is that what you mean to say now, in some cases? *A*—Yes, sir, she could in some cases

Q—But you don't think she could in all cases do you, doctor? *A*—No, I do *not*

Q—Now, in what percentage of cases do you think she would be able to determine whether or not she ought to be treated *mechanically*, surgically or medicinally? *A*—In what percentage of cases?

Q—Yes It would be a small percentage, wouldn't it, doctor? *A*—Yes it would be a small percentage

Q—A very small percentage of cases? *A*—Yes, sir

Q—The education which a physician acquires by his study at school and *his experience as a practitioner enables him to say, upon an* examination, *as to the probability as to* whether she ought to be treated surgically or mechanically, isn't that true? *A*—In the majority of instances yes, sir

Q—A woman has no such knowledge of herself or no such experience, and it is for that reason probably, and inability to diagnose her case, why she cannot tell, in the great majority of cases, whether she requires medicinal, mechanical or surgical attention, isn't that true? *A*—That is true

Q—Then, as a matter of fact, if I understand your testimony aright, doctor, *one of the first* things, and one of the essential things which is necessary, is a diagnosis of her condition, isn't that true? *A*—Yes—as a *medical man*, yes, *sir*

Q—As a medical man, that is absolutely true? *A*—Yes, sir

Q—And that is the first thing you undertake to ascertain when you treat a patient, isn't it? *A*—Yes, indeed

Q—And in ascertaining that, you ascertain it, as you have said, by taking a history, and then by a thorough physical examination? *A*—That is true

Q—That is true, is it not? *A*—Yes, sir

Q—And that is true in all cases, isn't it— *A*—Yes, sir

Q—*as a medical man*? *A*—Yes, sir

The witness stated that he could not, without an examination tell whether there were congenital or acquired malformations in the vagina, tubes, uterus or ovaries, nor could he tell whether there was a displacement of the uterus or the kind of displacement without examination

By such an examination he would know the character and extent of the displacement and whether they needed treatment He could not tell without examination whether there were any traumatisms from childbirths, or whether there was subinvolution of the uterus If he made an examination, he could tell whether the condition required treatment medically or whether it required surgical treatment He could not tell without examination anything positive about inflammations, but if he made an *examination* he could determine the condition and the treatment It is true also that in certain cases when he has made an examination of the pelvic organs, it is necessary to examine the secretion to learn the specific germ which is producing inflammation so that he might be in a position to treat it intelligently It is also necessary to examine the patient whether any new growth exists After such an examination, he is enabled to tell whether the case is one which may be treated surgically He would not know whether or not there were conditions existing that medicines could not reach without examination

Q—Now then, Doctor, I will ask you whether or not, from these considerations which we have been *going* over in a fair discussion of what is necessary on the part of a physician, if it is not necessary, in *your opinion*, in a *majority* of cases—*I* say a majority—practically all the cases that are related to uterine conditions and troubles arising therefrom in females, that an examination should be made by the physician— *A*—Yes, sir—

Q—before treatment? *A*—as a medical man, I believe that

Q—Now, doctor, assume the case of a married woman thirty years of age, who has borne two children, the youngest of which is eight years old A year after this youngest child was *born, she suffered* a miscarriage at three months' gestation At this time she had considerable fever for three or four weeks, with swelling and pain in the lower abdomen, and an offensive discharge from the vagina, which, for the first *week or ten days, was bloody in* character During this illness, which confined her to her bed for four weeks, she lost weight, and when she was able to sit up she was poorly and considerably emaciated During the following few months she gradually became *stronger, and was able at the end of that* time to get about and attend to light housework Since that time, though she has lived and cohabited with her husband, and has used no means of preventing it, she has never become pregnant Her menstrual periods have always been painful, and the flow excessive She has suffered ever since from a feeling of weight and a bearing down sensation in her pelvis She has had constant backache and she has had frequent desires to urinate, and the act of urination is painful, *giving rise to burning sensation on* voiding the urine She has had leukorrhea constantly for the past seven *years, and when her bowels move she has a feeling that her* private organs are going to drop out of her pelvis

Now, Doctor, can you form an opinion on these hypotheses as to the condition which this hypothetical woman is suffering from?

Mr Walker—I object to it

The Court—The question at *the present time is whether* he can form an opinion now as to what she is suffering from That may be answered yes or no

Mr Walker—Yes

The Witness—Well, from the history of the case—

The Court—No, no Can you form an opinion from the history as given you by Mr Scofield?

The Witness—Yes, sir

Mr T J Scofield *Q*—What is it, doctor?

Mr Walker—Objected to

The Court—Well, what is the objection, Mr Walker?

Mr Walker—I don't understand that this is cross-examination of anything he was asked He has answered from a doctor's standpoint how he would ask for an examination and *make it, and its benefits This is only another method* of saying he would require an examination It does not go to the direct examination on the value of the remedies

The Court—That is true, but are they not entitled to test his—

Mr Walker—*They may make him their own witness on* that

The Court—test his general knowledge of the subject

Mr Walker—I don't think that goes to the question of his knowledge or ignorance Suppose he answered yes or no, would the jury know? I would not

The Court—Well, he says he has an opinion

Mr Walker—All right

Mr T J Scofield *Q*—Now, what is that opinion, doctor?

The Court—Go ahead

The Witness—Well, my opinion is that she has a subinvoluted uterus and probably adhesions *as the result of a septic abortion*

Mr T J Scofield *Q*—Now, I am not asking for probabilities—

The Court—You asked for his opinion, and he gave it to you

Mr T J Scofield—That is true, but I am asking him if he had an opinion as to what it was, not what it probably might have been All right

Q—Can you, following the same hypothesis in *mind—have you an* opinion as to what *is causing her sterility* for the last seven years? *A*—Well—from that history alone?

Q—Yes *A*—Well, I think it is the result of an endometritis, chronic endometritis

Q—Now, can you say, on these hypotheses, whether this hypothetical woman is suffering from uterine prolapse or retroversion or retroflexion or salpingitis? *A*—No, I could not say on that history

Q—That is, without you made an examination? Is that right? *A*—Well, if you take it at the terminal stage there, I doubt that I could diagnose the salpingitis, even with an examination

Q—Can you intelligently and can you scientifically, *doctor, treat* such a woman as I have described by medicine taken by the mouth, without first learning the underlying cause of the trouble? *A*—Well, *it would* not be absolute scientific treatment, but I think that one could get—do considerable *good in* that case, even without examination, from that history

Q—Then you say you could not tell what would be scientific treatment *from that history*? *A*—Not absolute scientific treatment, no, sir

Q—Now, doctor, if, upon examination of this hypothetical woman, you found she had a badly lacerated perineum, and a large subinvoluted uterus was down within half an inch of the vulva, against the bladder, and that it could not be replaced on account of old inflammatory adhesions, would you say, as a medical man, that, in addition to general directions as to regulating the bowels with laxatives the usual advice as to antiseptic douches sitz baths etc—would you expect to cure this uterine prolapse by the use of an alcoholic solution of carduus benedictus and viburnum prunifolium such as Mr Walker has described to you in a menstruum of 20 per cent alcohol

Mr Walker —I object to that on the ground that the treatment in the book advises accompanying it with pessaries under those conditions in addition to the treatment—and he does not put it all in

THE COURT —The book itself does not include the operative case as I recall it

Mr Walker —Oh, but it tells in cases of that sort that a pessary—

THE COURT —Well, put in the pessary Mr Scofield

Mr T J Scofield —Well, then, we will put in the pessary Put the pessary right in and up against the uterus

Mr Walker —Then let us find out if it is not an operative case—

Mr T J Scofield —No, no, Mr Walker, pardon me

Q —Would that case be a case for a pessary doctor, with those inflammatory adhesions in that condition? *A* —No it would not be a case for a pessary but the treatment outlined there would make it easier for the patient

Q —How is that doctor? A —I say the treatment that you have outlined there would relieve the patient of some of her distress but it would not cure her

Q —That is not the question I ask you whether or not the Wine of Cardui would cure the prolapse? *A* —No of course not

Q —Now, doctor if a married woman who had borne children came to you for consultation and complained of constant backache, a feeling of fulness and weight in the pelvis and irritation and profuse whitish discharge from the vagina and stated that these symptoms were all marked—more marked as she approached her monthly sickness and that her menses were painful and her flow excessive will you please explain to the jury all of the pelvic conditions you know of that would cause such symptoms as I have described there? *A* —That is the pain at the menstrual periods and the whitish discharge from the vagina—

Q —Yes *A* —and the bearing down pain did you say?

Q —Yes *A* —And pains in the back?

Q —Yes And excessive flow doctor and backache feeling of fulness and weight in the pelvis, and irritation and profuse whitish discharge from the vagina and she stated that those symptoms were all more marked as she approached her menstrual period every month Now how many different things might that condition be referable to? Or those symptoms

Mr Walker —Is this the same woman or another case?

Mr T J Scofield —This is the same girl

Mr Walker —That is the adhesions and the bearing down and the—

Mr T J Scofield —No It is not the same woman but a different woman complaining of these conditions

Mr Walker —All right

The Witness —Well it might be due—it might be due to an infection —a local infection in the vagina or in the uterus or in the tubes It might be due to a systemic condition anemia tuberculosis diabetes Bright s disease heart disease

Mr T J Scofield —It might be due to displacements might it not also doctor? *A* —Well I am figuring that the displacements may be due to the things I have mentioned

Q —Yes. It might be due to polypi might it not and morbid growths of different kinds also? *A* —I don t know I have not seen polypi produce such symptoms as you have mentioned there

Q —So you don t know whether that produces it or not Now then in a case like that, in order to get at the underlying truth to find out what the condition was you would want to make a pretty careful examination wouldn t you doctor? *A* —Yes, I would

Q —Now then doctor take the case of a woman 45 years of age who comes to you for treatment, and gives a history that for the past eight months she had been troubled with an offensive discharge from the vagina occasionally tinged with blood that the condition had been gradually getting worse and worse until now the odor from this discharge is very offensive that she was losing weight her skin was becoming somewhat yellow and she had a feeling of weight and a dragging sensation in her pelvis Would you be able to tell without an examination what this woman was suffering from doctor? *A* —How old did you say she was?

Q —Forty five about. Forty five is the question *A* —I could only surmise

Q —Well by examination you could tell couldn t you? *A* —By—yes—

Q —By a proper examination? *A* —Microscopical examination perhaps

Q —What would you surmise doctor? *A* —Why I would surmise some foreign growth

Q —Would you have an opinion as to whether it was a malignant growth a cancerous growth or not? *A* —No I would not venture such an opinion

Q —Well from the symptoms indicated in the question it might be a cancerous growth might it not? *A* —Well all I can say about that is that cancer sometimes produces such symptoms

Q —Yes Now assume again doctor that upon examination you found that she had cancer of the neck of the womb and assume it to be a fact that she had been taking Wine of Cardui in tablespoonful doses three or four times a day for eight months for this condition Would you give it as your opinion as a medical man that this was a proper form of treatment for this condition? Answer yes or no

Mr Walker —Objected to There is no claim anywhere that this is a proper form of treatment for cancer

THE COURT —He may answer

To which ruling of the Court the plaintiff etc, excepted

The Witness —Well, you mean that is the treatment alone—

Mr T J Scofield —Yes

The Witness —giving Wine of Cardui?

Mr T J Scofield —Yes

The Witness No That is not a proper treatment

Mr T J Scofield *Q* —Now doctor if a woman came to you with a history of amenorrhea, and you learned that she was 18 years of age that her menstrual period developed at the age of thirteen and that she had been regular for about three years and since that time she had only been unwell once or twice and you found upon examination that she was profoundly anemic and upon further examination you determined that her anemia was due to hookworm disease If you learned further she had been taking Wine of Cardui uninterruptedly for the past three years for this condition amenorrhea would you give it as your opinion as a medical man that the use of Wine of Cardui was a proper and a scientific treatment for the cure of her anemia? *A* —No

Q —Or amenorrhea either? What is your answer? *A* —My answer is that you might get some symptomatic relief for the amenorrhea but it would not cure the hookworm

Q —I am asking you whether or not it would cure the amenorrhea and the anemia that treatment, under those circumstances? *A* —Well, amenorrhea is a symptom

Q —I understand but— *A* —You relieve symptoms you don t cure them

Q —Yes *A* —And the cause of that symptom, I take it, leads back to the anemia and the anemia leads back to the hookworm

Q —And this treatment would not cure the hookworm would it? *A* —No sir it would not

Q —Suppose you take the same hypothetical question I have given you and instead of the words hookworm' suppose you put in there 'malaria' that was causing the amenorrhea—or the anemia—would Wine of Cardui be proper treatment for that? *A* —It would be a harmless tonic but it would not be proper treatment

Q —I am not asking that Would it be a proper and scientific treatment for amenorrhea? *A* —It would not be a specific treatment no sir

Q —Suppose it is syphilis instead of hookworm or malaria would Wine of Cardui be a specific and proper treatment for that? *A* —It would not be a specific treatment no, sir

Q —Suppose instead of being due to hookworm or malaria or syphilis —suppose the condition was due to tuberculosis would Wine of Cardui be a proper and a specific treatment for tuberculosis? *A* —Well there is no recognized specific treatment for tuberculosis

Q —Just answer yes or no Would it or would it not? *A* —I cannot say yes or no I must have some latitude

Q —All right *A* —We give tonics in tuberculosis and a tonic may be indicated here, and of course we direct our efforts to the causal factors

Q —Well would the Wine of Cardui cure the tuberculosis? *A* —No it would not

Q —Now Doctor when you take care of a pregnant woman with a view to attending her in confinement is it your custom to make urinalyses during the last few months of her pregnancy? *A* —I make it every month and the last few months every two weeks

Q —Why is it you do that doctor? *A* —Because I can gage of the functionating powers of the patient s kidneys by that test

Q —Suppose upon such examination from time to time you would find that a good deal of albuminuria were present in the urine would you consider there was any danger of the development of eclampsia? *A* —Well it would depend it would all depend on what was causing the albuminuria

Q —Well suppose she had Bright s disease or nephritis then would you say there would be any danger of eclampsia? *A* —There would be a possibility of eclampsia yes sir

Q —Now under such circumstances, doctor, would you think it good treatment to give your patient a medicine containing the equivalent of 96 drops of whisky three or four times a day in such a condition? *A* —I don t think 96—I do not think the equivalent of 96 drops of whisky would do any particular harm

Q —You think it would be good treatment, do you doctor? *A* —Not good treatment no sir

Q —It would not be good treatment? *A* —I do not say that it would not be good treatment no to give the equivalent of 96 drops of whisky

Q —Doctor are you the same Dr von Zelinski who was employed by the Jiroch Medicine Company or its attorneys to testify in a criminal proceeding here or in a case here before Judge Landis a few months ago? *A* —No I have never—

Q —You never heard anything of the kind? *A* —No sir

Q —Doctor are you or are you not connected with the concern known as Chicago School of Refraction? *A* —I do some teaching for them yes sir

Q —Reading from the catalog which is copyrighted 1916 by the Chicago School of Refraction I find that Dr W F von Zelinski is one of the board of directors of that school. You are the doctor are you? *A* —That refers to me yes sir

Q —That refers to you Reading also from the catalog I find that Walter Franz von Zelinski M D Ph G Sc B Professor of Anatomy Histology and Physiology of the Eye Does that refer to you, doctor? *A* —Yes sir it does.

Q —I notice as I say in that catalog that you have the letters Sc B after your name *A* —Yes sir

Q —And that represents what? *A* —Bachelor of Science Scientiae Baccalaureus

Q—From what school did you obtain the Bachelor of Science degree? A—From St Ignatius College.

Q—When? A—1910

Q—Is it not true, doctor, that the Chicago School of Refraction is a concern which teaches the fitting of spectacles, on the mail order plan? A—I do not know about that I understand that they have an extension course I have prepared some lectures on anatomy for them

Q—Are there any students at all in actual attendance on a residence course given by the Chicago School of Refraction? A—Well, I will answer that—

Mr Walker—I object to it

The Court—What difference does that make?

The Witness—I lecture to thirty to thirty five students every Wednesday night

Mr T J Scofield—Now, then, doctor, finally, I want to ask you whether or not—are you connected with the Chicago College of Medicine and Surgery? A—No, sir

Q—Well, you know Dr Funck there, who is professor of materia medica, don't you? A—Yes sir, I know him

Q—Well, do you agree with Dr Funck, that a solution which contains the equivalent of 96 drops of whisky—

Mr Walker—I object to it now in that form

Mr T J Scofield—What is it?

Mr Walker—I object to the question now in the form in which you put it, "Do you agree"—

The Court—What difference does it make, Mr Walker, whether he puts it in that form, or whether he states what Dr Funck says, and then asks, "Is that your opinion also?"

Mr Walker—It really does not make any difference, if the form is good—

Mr T J Scofield Q—(Continuing)—as to whether or not the use of a medicinal solution containing the equivalent of 96 drops of whisky to each dose would be a scientific and specific remedy with a curative effect in the case of gonorrheal vaginitis?

Mr Walker—I object

The Witness—What is in the solution?

Mr Walker—Go ahead

Mr T J Scofield Q—The solution concerning which we have been talking doctor A—The solution of which we have been talking?

Q—Yes, the Wine of Cardui solution A—And you want to know if it has a specific effect?

Q—Well, I am asking you if it is a scientific and specific remedy for gonorrheal vaginitis A—You mean has a destructive effect on the gonococcus?

Q—You are a physician, don't you understand what a specific and scientific remedy means? A—Yes, but my understanding of a specific may differ from yours—my understanding

Q—Well, you answer it as you understand it Is it a specific and a scientific remedy for gonorrheal vaginitis? A—Why, no

Mr T J Scofield—That is all

Mr Walker—That is not all of it—with a curative effect, doctor?

The Witness—Oh, it may have an indirect curative effect It is not a specific

The Court—Any redirect examination?

Mr Walker—Yes

REDIRECT EXAMINATION BY MR WALKER

Q—Is amenorrhea ever accompanied by typhoid fever? A—Yes, sir

Q—Can you cure typhoid fever with Wine of Cardui? A—Not to my knowledge

Q—Are there sometimes cases with amenorrhea that also have diarrhea? A—Well, more likely they would have metrorrhagia

Q—Could you cure the diarrhea with Wine of Cardui? A—I do not think so I do not know

Q—Suppose they had cholera, might they have amenorrhea with cholera? A—Yes, sir

Q—Do you think you could cure the cholera with Wine of Cardui? A—No, I don't

Q—Or if they had a toothache, do you think you could cure it with Wine of Cardui, if there was an accompanying amenorrhea at the same time? A—I do not know, I don't think so

Q—Take that first case I have forgotten how many adhesions there were in that first illustration, at the latter end, if the womb was—I do not remember whether it was half out or all out or what part of it was out Do you think the woman there would know that her womb was down and out? A—I think she would

Q—Do you think she would have any difficulty in diagnosing it then? A—She could diagnose the fact that it was out

Q—Yes Now, doctor tell me some cases, if you know of any, where a woman can tell what is the matter with her when she has some genital disturbance or difficulty? A—Well, a woman can describe the symptoms, although she might not be able to name the disease

Q—Yes A—She can tell that her womb is protruding out of the vagina She can tell whether she has any distress on urinating, or—

Q—You think she might know that? A—Yes

Q—Yes A—And she can tell if she has backache and bearing down pain, or if she is constipated, or if she feels weak and indisposed, and if she has headache

The Court—She can tell anything that she has intelligence enough to make a note of?

The Witness—Yes, sir

Mr Walker—Wait a minute, I am not through Wait a minute I am requested to ask another question

Q—Doctor, in your opinion, would the 46 drops of alcohol in this medicine, taken as prescribed, have any detrimental effect on a woman who is pregnant, even if she had nephritis? A—Not to my belief

RECROSS-EXAMINATION BY MR T J SCOFIELD

Q—Doctor, typhoid fever is a fever which runs some two or three weeks, or four, generally, is it not? A—Yes, but—

Q—But amenorrhea, as I understand it, is constant—is a chronic condition and runs for months and months? A—No, I do not understand it as such

Q—You don't? A—No, not for months and months

Q—You would not call it amenorrhea, if it did not continue—the absence of menstruation continue right along? A—You see, we have various kinds of amenorrhea We have a physiological amenorrhea in pregnancy

Q—Yes, but— A—And we may have the change of life—

Q—I am not referring to any physiological amenorrhea like pregnancy or after the menopause I am talking about the case of a girl—the amenorrhea that is produced by typhoid fever, would be a matter of one period at least wouldn't it? A—At least, yes, sir

Q—And no more possibly? A—And no more, possibly

Q—So far as the diarrhea and colic and those things are concerned—

Mr Walker—Cholera

Mr T J Scofield Q—Cholera Those are transient conditions, are they not? A—No, I would not say that cholera is a transient condition

Q—What would you say they were? A—Cholera may be a fatal disease

Q—I am referring to the length of time they last, doctor, if they would produce amenorrhea, as to how long the amenorrhea would be supposed to result, from those conditions? A—It would all depend upon what effect the cholera had upon the general system

Q—Yes A—It may have lowered the vitality, and the disease may have been so severe that there may be amenorrhea over a longer period of time

Q—What do you mean by that, a longer period of time? A—It may last six or seven or eight months

Q—It acts very much like malaria, doesn't it? A—Sometimes

Mr T J Scofield—That is all

Mr Walker—One question

Q—Would it be any easier to cure typhoid with this medicine because it ran three weeks, than it would consumption, because it ran three years? A—Would it be any more easy?

Q—Yes—Wine of Cardui A—I do not know as you can cure either one with that

Q—Does the time limit on either disease make any difference to that fact? A—Not a bit

Whereupon an adjournment was taken until 2 o'clock p m of the same day, May 16, 1916

May 16, 1916, Afternoon

The court met pursuant to adjournment Depositions were read

Whereupon the further hearing of said case was adjourned until the following day, May 17, 1916, at 10 30 o'clock, a m

May 17, 1916, Morning

TESTIMONY OF DR GEORGE C AMERSON

Dr G C Amerson was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR WALKER

Dr George C Amerson testified that he is a surgeon He graduated from the Hahnemann Medical College of Chicago and College of Physicians and Surgeons of the University of Illinois He is ex-intern of the Cook County Hospital and was attending surgeon on the Cook County Hospital staff for eight years He was on the staff of the Frances E Willard Hospital for seven years He is at present attending surgeon of the Garfield Park Hospital and the West Side Hospital of Chicago He is professor of surgery in the Chicago College of Medicine and Surgery, and in the Illinois Post Graduate School of Medicine

He testified that he is a member of the Chicago Medical Society, the Illinois State Society, the American Medical Association, the Tri-State Medical Society, the National Association of Military Surgeons, that he is captain surgeon of the Illinois National Guard He has devoted himself exclusively to surgery for five or six years He has treated all phases of diseases peculiar to women, covering thousands of cases, from puberty to the menopause

Approximately 50 per cent of the cases of women's diseases before he specialized in surgery were cases where the conditions were not surgical Most of the cases which he sees now are referred cases, treated by medicine before they come to him He stated that practically all girls suffer from pain and other symptoms at puberty, and that medicines taken by mouth are indicated at this time He stated that women at the menopause usually suffer with symptoms directly due to the menopause and that at such times, uterine tonics and sedatives would be indicated as well as general tonics He stated that, in a pregnant woman not suffering from any symptoms except the ordinary symptoms of pregnancy, uterine tonics and general tonics would be indicated He stated that at the menstrual period, during pregnancy there are symptoms such as cramps and pains with some menstrual flow and the same medicines are indicated at this time

Q—In those cases doctor where you prescribed a uterine tonic will you tell the jury how the tonic acts how it can act and have any effect at all? *A*—Well, we have what are known as general and special tonics tonics that seem to have a sort of selection or preference for their localized actions like uterine tonics and we have hepatic tonics for the liver and we have cardiac tonics for the heart and so forth and those special tonics are picked up of course by the blood stream but seem to show a selective action on the special organs like the uterus and increase the tone

Q—A little louder *A*—Increase the tone and act as a tonic to that particular organ That would be a special tonic

Q—May a medicine be a tonic and at the same time a sedative? *A*—Yes sir

Q—What do you call a medicine in your nomenclature that in a short time or over a time contracts spasmodically or acts upon the uterus to contract it what do you call such a medicine as that? *A*—It would probably be a stimulant

Q—Do you distinguish in your practice between a stimulant and a tonic? *A*—Yes sir

The witness stated that in cases of threatened abortion, the treatment is rest, sedative treatment and uterine tonic to stop the uterine expulsive action of the uterus, and he stated that during pregnancy a tonic treatment is given which relieves childbirth and makes it more normal

Dr Amerson stated that he is familiar with viburnum prunifolium He has been using it for the last fourteen years and considers that it has therapeutic value He is familiar from his reading and contact with doctors with carduus benedictus, although he has never used it in his practice He believes carduus benedictus is a valuable therapeutic drug in most cases where there are female diseases because it belongs to a group or class of drugs which belong to that class of diseases although he himself has never used it

Q—Doctor suppose a woman had tuberculosis where it was not in any of the genitalia of the woman where it was not in the womb or ovaries or located in the pelvis Could you tell by a mere digital examination through the vagina that she had tuberculosis? *A*—No sir

Q—Or that she had malaria? *A*—No sir

Q—Or that she had croup? *A*—No sir

Q—State whether or not, doctor in your opinion a drug might be valuable if a woman was suffering with amenorrhea or dysmenorrhea at the same time that she was suffering with consumption, in easing the distressing conditions that arose from the genital trouble independent of the consumption or the other trouble? *A*—I believe it would

Q—Would a tonic be helpful in the general relief of the woman independent of the specific disease of tuberculosis? *A*—Yes sir

Q—Or malaria, or whatever that disease might be? *A*—Yes sir It is part of the treatment

Q—In your opinion is there any drug or tonic that will cure tuberculosis? *A*—No sir

Dr Amerson stated that he has never treated hookworm He stated that practically all drugs used by physicians in liquid form contain alcohol as a solvent He considers the alcohol negligible in prescribing the drugs It has no deleterious effect He does not think the prescribing of medicine which contains 20 per cent of alcohol at puberty would tend to give the girl an alcoholic habit or tend to develop the passions He defined vicarious menstruation as a periodical establishment of a hemorrhage from some orifice other than the uterus at the time of the expected menstruation In such cases general tonics, uterine tonics and pelvic tonics would be indicated, viburnum prunifolium would be indicated It would also be indicated in amenorrhea, dysmenorrhea, menorrhagia and metrorrhagia

The witness stated that he has done every type of operation there is on the female pelvis He stated that there are malpositions of the uterus that are not surgical cases and they occur often where the patient is unconscious of them He would not expect the patient to have any information about this condition if there were no symptoms He stated that there are cases of prolapse that are best treated medically He would not consider the alcohol in Wine of Cardui as deleterious to the people taking it in the prescribed doses either at puberty, pregnancy or the menopause He would not expect it to produce Bright s Disease at the time of pregnancy because of its alcoholic content

Q—Will you tell the jury why you think the alcohol would be negligible in those cases with the use of this drug in the proportions named? *A*—Well it is in solution It is diluted and is acting as the vehicle for drugs. The amount of alcohol would be considered negligible because it would very rapidly oxidize in the stomach and probably stimulate to a certain extent or promote the absorption of the drug that it was acting as vehicle for

Q—*Do you limit the oxidization of the drug to the stomach?* You said stomach *A*—Not entirely no sir

Q—That would be one of the processes? *A*—One of the processes yes sir

Q—Now doctor are you at all acquainted with the synergistic action of drugs and what is meant by that term? *A*—Yes sir

Q—In your practice do you ever use viburnum prunifolium in combination with other drugs to accomplish the purpose that you desire in diseases of women? *A*—Yes sir

Q—From what you know of carduus benedictus and of viburnum prunifolium state whether or not in your opinion a medicine containing *the two drugs would* be at all *injured by* the fact that the two drugs were in combination? *A*—I think not, it might be benefited

Q—Then you find no criticism of the use of the drugs together? *A*—No sir

Q—Doctor, state whether or not, in your opinion the trying out of a drug upon an animal such as a dog or cat without being able to note the effect of the drug either on the respiration or circulation of the animal is a proof that the drug would be nonpotent and inefficient if given to a human being in sickness

Mr T J Scofield—Wait a moment, I do not think Dr Amerson has qualified as a pharmacologist

The Court—No he has not

Mr Walker—I do not think he has to

The Court—He has qualified as a physician, and he may give his opinion for what it is worth

Mr Walker—I am speaking as a doctor

To which ruling of the Court the defendants etc excepted

A—It would be valueless

Mr Walker *Q*—You think such a test would be valueless? *A*—Yes sir

Q—Do you doctor *make* a distinction between a *pharmacological* test on a medicine and a clinical test? *A*—Yes sir

Q—How many medicines within your knowledge if you can tell are used without *reference* to their pharmacological findings but as a result of the clinical information? *A*—Well there are thousands of drugs that are recommended for use only a few of which have ever been proven pharmacologically

Q—Are they in use? *A*—Yes sir

Q—Many of them? *A*—Yes sir

There was then read to Dr Amerson, an abstract of the test performed by Dr J Clarence Webster He stated that it would decidedly not be a proof that the medicine was inefficient if given to a human being by way of the mouth for any disease that the woman might have, because the action of the drug locally does not disprove that it has medicinal value The fact that the uterus blanched after pituitrin does not indicate to him that the previous drug which did not cause this action had no action on the uterus

He stated that inflammation such as endometritis might be aided by medical methods Where there are adhesions they do not necessarily require surgical operation His opinion is that Wine of Cardui would be a proper medicine under these conditions The alcohol would not be injurious nor would it increase the inflammation He usually found in amenorrhea metrorrhagia etc the general system required toning up

The witness stated that he had read the Home Treatment for Women for 1913

Q—Have you read that chapter of the book also on vaginitis? *A*—Yes sir

Q—I call your attention for the purposes of this question, under the head of Vaginitis to a sentence the most frequent cause of vaginitis is gonorrhea brought on by infection sexual excess or unhealthy discharge from the womb ovaries tubes or bladder Now is gonorrhea itself brought on by sexual excess where there is not the germ of gonorrhea? *A*—No sir

Q—Is it brought on by an unhealthy discharge from the womb ovaries tubes or bladder where there is not the germ present of gonorrhea? *A*—No sir

Q—You read this sentence yourself did you? *A*—Yes sir

Q—Now take a case—is vaginitis brought on by gonorrhea? *A*—Yes sir

Q—State whether or not in your opinion doctor there is a drug or a medicine that will cure anywhere any kind of medicine that will cure by killing the microbe itself the gonorrheal microbe? *A*—No sir

Q—Then how is it treated and how does medicine act if at all in reference to that germ? *A*—Well the treatment consists of local treatment—

Q—Well tell us what you mean by local treatment? *A*—Local treatment would be tamponing or medicated douches or possibly even stronger solutions than we usually use to inhibit possibly the bacteriological activity of the superficial organisms and the general treatment would be tonics to increase the resistance and efficiency of the tissue involved thereby increasing a natural power in the tissue itself to inhibit or restrict or destroy the bacterial activity There is no medicine—

Q—Do you—go ahead, doctor *A*—that I know, locally, that will by the natural resistance of the tissue, and the cure is brought about by the natural resistance of the tissue that is invaded overcoming the bacterial activity

Q—And is medicine indicated, doctor, to enforce and assist the tissues, through the blood supply, to perform that function and eradicate the germ? *A*—Any medicine that would increase the tone or the resistance of the tissue would be valuable in the treatment of the infection

Q—Now, doctor, would a medicine such as Wine of Cardui, that I have spoken about, be deleterious to the blood supply or the tissues of the organs, and would it increase the ability of the gonococci germ to propagate itself, by reason of the alcoholic content in such medicine? *A*—No, sir

Dr Amerson stated that treatment described in this book for falling of the womb, amenorrhea, metrorrhagia, etc, not including the medicine is a practical and proper treatment Assuming that a tonic is indicated, Wine of Cardui would be such a tonic He stated that there was a connection through the sympathetic nervous system between the breasts and the female reproductive organs The breasts are valuable in making a diagnosis of the diseases of the pelvic organs If the woman is in a run down condition, he stated you would expect drooping or falling breasts Anything that would improve the general health and development of a woman would naturally improve any part of her and thus aid in restoring the condition of the breasts He has never prescribed Wine of Cardui to his patients He stated that Wine of Cardui would be indicated as a general tonic during parturition

Q—I don't suppose, as a physician you prescribe proprietary medicines in your practice at all? *A*—Not very often

Q—Have you ever used Hayden's Viburnum? *A*—Yes, sir

Q—Have you used any of the Parke Davis preparations of drugs? *A*—Yes, some of them, not very many of them

Q—And in what cases have you used Hayden's Viburnum? *A*—Oh, in cases where viburnum would be indicated

Q—Well, is that in reference to diseases of women? *A*—Diseases of women

Q—Do you know how much alcohol is in that, doctor? *A*—I don't exactly, I believe about 40 per cent of alcohol

The Court—How much did you say?

The Witness—Forty per cent

The witness described various conditions which might produce sterility in women In such conditions, uterine tonics would be indicated

The witness is familiar with leukorrhea and its treatment Hygienic and local treatment with uterine tonics would be indicated

CROSS-EXAMINATION BY MR SCOFIELD

Dr Amerson testified that after his graduation from the Chicago Homeopathic School in 1902, he became an intern in the Cook County Hospital He was there as a homeopathic intern for 18 months During the time he was intern he took the senior course at the College of Physicians and Surgeons, extending over two years While an intern he did not practice according to the homeopathic methods strictly but with leeway He used drugs singly and in combination He used them in combination homeopathically He says the teaching of homeopathy is for individual prescribing but the practice of it is in combination He graduated from the College of Physicians and Surgeons in 1904 and went immediately into practice In the last five or six years, he has been doing surgery entirely Shortly after he graduated from the Cook County Hospital he was appointed associate surgeon on the staff and he spent all his spare time in the Cook County Hospital in this work His work was surgery He became attending surgeon in 1906 When he saw cases, he determined whether they were to be treated surgically or medically by a general examination to find out what the cause of the trouble was

This applies practically to all conditions of the female pelvic organs He testified that he could not tell what was the cause of the condition until he made an examination, nor could he tell the treatment until he had made an examination

Q—In other words, you would not consider it a safe proposition to guess at a condition when it was possible for you to ascertain it, that is right, is it not? *A*—I would not consider it—

Q—What is that? *A*—I would not consider it a guess—I would

The witness testified that the woman could not make a diagnosis of her condition She could tell whether she had pain Sometimes the physician cannot make a diagnosis by his examination The physicians do the best they can

Dr Amerson testified that sometimes a woman would state that she had leukorrhea or whites, which is a symptom He named some of the conditions which may produce leukorrhea It is possible for the physician by the history and general examination and examination of the discharge—which he invariably makes—to tell the cause of the condition and the treatment The treatment of ordinary leukorrhea and gonorrhea which he gives is usually along the same lines although one might add serologic treatment It would not make any difference whether the condition was gonorrheal or otherwise as to what medicines are given by mouth It would not make any difference in the douches although the latter might be more frequent and the stringency increased, if the case was one of gonorrhea

Q—Now, what does the astringent do? What is the effect of the astringent, some astringent generally, in the douche? *A*—It contracts the tissues

Q—Would you consider it good treatment to contract and lock up these tissues, with the gonococci there?— *A*—It is used right along

Q—in the mucous membrane? *A*—It is used right along

Q—I am not asking you that I am asking you if you consider that it would be good treatment for you to give a douche that was an astringent which, as you say, would be for the purpose of shrinking up, and which, in its effect, would lock up the gonococci in the mucous membrane, with the possibility of its working its way up into the bladder, or into the fallopian tubes and ovaries? *A*—The gonorrheal organisms are already implanted in the cells and the tissues, and your astringent would contract the vessels, and possibly have a disposition to localize it, rather than disseminate it through the tissue

Q—Then you put it upon the basis that that might result? *A*—Yes, sir

Q—You say possibly it might What do you mean by that? *A*—I said also that I might possibly use an astringent I don't mean by that that I use an astringent all the time, or that I would cauterize them all the time

The witness stated that such a treatment was surgical He stated that he did find cases of pyosalpinx which were due to gonorrhea and some authorities stated that practically all cases of pyosalpinx are due to gonorrhea

He described the way the gonococcus reaches the fallopian tubes by extension up from the vagina It may go through the urethra to the bladder and produce cystitis The treatment of vaginitis, assuming that it was not already beyond the cervix, would be local with perhaps some general tonic He sometimes gives medicated douches containing boric acid and argyrol or silver solution for the purpose of inhibiting the germ which he does not believe they do When argyrol and nitrate of silver are used in the eye of an infant, they are not put there to kill the germ but primarily to irrigate, and secondarily, he believes, it inhibits the gonococcus

Q—In what way does it inhibit the action? *A*—By its astringent action, I suppose

Q—It kills it, doesn't it, doctor? *A*—You can say kill it, if you want to

Q—What? *A*—You can say kill it, if you want

Q—That is what it does— *A*—It kills it for all practical purposes

Q—Don't you know, doctor the state laws require you to do it for that very purpose? *A*—Recently I believe it does—it is compulsory

Q—And the reason, and the object of it is for the destruction of that germ, isn't that true?

Mr Walker—That is objected to The fact that the state law requires it, we don't object to, but that the state law requires it for that purpose, we do object to

The Court—Objection sustained

To which ruling of the Court the defendants, etc, excepted

Mr T J Scofield *Q*—I will ask you, if you don't know, as a matter of fact, that that is the purpose for which you give that drug, under those circumstances, to babies?

Mr Walker—That is another matter All right Answer that

The Witness—To kill the germ?

Mr T J Scofield *Q*—Yes *A*—Yes, you can say kill, if you want. A better word would be "inhibit"

Q—All right So you make a distinction between inhibit and kill? *A*—Yes, sir, because we have lots of organisms in our mouth, throat and nose that are not active

The witness stated that he ordinarily does not give the same treatment in acute gonorrhea in women that he gives for ordinary catarrh of the womb He gives directions for preventing transmission of the disease to others

Whereupon an adjournment was taken until 2 o'clock p m of the same day, May 17, 1916

(*To be continued*)

Correspondence

Endocrinopathic Inheritance

To the Editor —In the letter of Dr Irving F Stein (THE JOURNAL, June 3, 1916, p 1811), in which he gives a heredity chart of a family through three generations one original parent of which had diabetes, an apparent exception to transmission of endocrinopathic characteristics is presented In analyzing this chart, we first note that only an absence of a normal metabolic factor (diabetes) is presented—and no absence of a normal growth factor, in the parents In the analysis of my paper (THE JOURNAL, May 6, 1916, p 1438), I drew a conclusion that metabolic disturbances were seemingly recessive in the male and dominant in the female On this basis, only the families of the daughters of the individual No 3 of Dr Stein s chart could be considered in the endocrinopathic inheritance The number of such offspring is shown by the chart to be seven Of these seven individuals, four are males and therefore apparently immune Of the three females (who are probably still quite young) *one already has an endocrine disturbance*—obesity That is, 33⅓ per cent ! Furthermore, while growth abnormalities are easily distinguishable, yet metabolic disturbances (diabetes, hypoglycemia and hyperglycemia, calcium and phosphorus disturbances, etc) can frequently only be determined by careful laboratory analyses Unless this has been done by Dr Stein, it would be unfair to reject any individuals merely on normal appearances I do not know what criteria Dr Stein uses to distinguish metabolic disturbances, but I would be much interested to know whether vagotonia, muscular fatigability, tachycardia, bradycardia, pigmented skin, abnormalities of hairy growth and similar conditions were among them I should also like much to know just what Dr Stein means by simple goiter"

WALTER TIMME, M D, New York

Treatment of the Neuropathic Child

To the Editor —In THE JOURNAL June 3, 1916, p 1816, in the discussion of papers read before the Medical Society of the State of New York at Saratoga Springs, I am quoted as saying

> When the mother brings such a child to me complaining of night terrors bed wetting and nervous symptoms, I usually prescribe bromids and Fowler s solution and let it go at that

The reporter either misunderstood me, or else did not listen to what I had to say If you will read the rest of the discussion as published you will see that it is inconsistent with the statement quoted above In fact, it was the crux of my discussion that physicians are apt to minimize the importance of studying the nervous child from every point of view possible, including organic disease, heredity, environment and economics I uttered a warning that when a child, as described above, is brought to a physician, he should not be satisfied with a diagnosis of 'nervousness' and send it away with a prescription for bromids or Fowler s solution, and feel that he has discharged his duty to his patient and to society at large because many of these children later in life fill the asylum, homes for epileptics and reformatories

MOSES KESCHNER, M D, New York

Infant Mortality Rate of Passaic, N J

To the Editor —In the Current Comment on 'The Baby's Chance for Life (THE JOURNAL, May 27, 1916, p 1707) concerning the infant mortality rate in 144 cities based on figures supplied by the New York Milk Committee, it was stated that Passaic, with a rate of 193 5 had the highest rate of all the reporting cities This statement started an uproar here, and good will no doubt be the result

As a matter of fact Passaic does not deserve this bad eminence Investigation shows that a very material error was made in compiling the vital statistics for the New York Milk Committee in this city, and that the true infant mortality rate for Passaic in 1915 was not 193 5 but 136 1 Under separate cover are sent copies of the *Daily News* giving all the evidence in the case

As the mistake was made here, we shall have no cause for complaint if THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION will now aid us in correcting the false report which by now has been read in every part of the United States

The state department of health, at Trenton, records our infant mortality rate for 1915 as 136 1, and a checking up of the figures here shows this to be correct Our vital statistics are kept separate from the board of health, and it was in answering the New York Milk Committee's questions that the error was made

We realize that Passaic is not perfect, but we do feel that we should be saved from the consequences of this blunder

G M HARTT, Passaic, N J
Editor, Passaic *Daily News*

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer s name and address but these will be omitted on request

IS AROMATIC SPIRITS OF AMMONIA A DESIRABLE PREPARATION?

To the Editor —The dosage of aromatic spirits of ammonia is given as 30 minims often repeated that apparently means about 20 drops of alcohol, with a little over 1 grain of ammonium carbonate and a little less than 3 drops of aqua ammoniae

Where the effect of ammonia or its carbonate is wanted would it not seem better to prescribe aqueous solutions those who still find alcohol useful in medicine prescribing it as whisky or otherwise? In other words does this preparation still deserve a place in the pharmacopeia?

W R T M D

ANSWER —Aromatic spirits of ammonia is an old-fashioned complex mixture, its reputation has little scientific basis Whatever effect it may have is probably psychic, to a considerable degree, at least Such effect might be expected from the irritation of the nasal mucosa by the ammonia and the flavor and odor of the lemon lavender and nutmeg oils The physical effect, if any, is probably due to the alcohol, though the ammonium carbonate and combined ammonia may have some restorative action by their irritation of the gastric mucosa or by their neutralization of nauseating acids in the stomach

Our correspondent's point is well taken When ammonium carbonate is to be given, it is better to give it in aqueous solution When alcohol effects are desired, whisky is a better medium for administration

INTRAVENOUS PRODUCTS COMPANY — TREATMENT OF SHOCK

To the Editor —1 Please give me the status of the Intravenous Products Company of Denver They are claiming great results Is their treatment safe sane and trustworthy?

2 Can a better treatment of shock be given than those of our textbooks?

PRACTITIONER

ANSWER —1 THE JOURNAL March 25, 1916, p 978 discussed several of the preparations made by the Intravenous Products Company

2 Up-to date textbooks by reliable authors, are presumed to give the best treatment For treatment of shock, see Therapeutics THE JOURNAL, May 6, 1916, p 1464

PROPORTION OF PHYSICIANS TO POPULATION

To the Editor —Please let me know in what number of THE JOURNAL there appeared an article regarding the proportion of physicians to population

A W VALENTINE M D Washington D C

ANSWER —In Queries and Minor Notes, THE JOURNAL Feb 1, 1913 p 388 statistics are given as taken from the census of 1910 and the third edition of the American Medical Directory In THE JOURNAL, May 27, 1916 p 1736 statistics appear as taken from the fifth edition of the American Medical Directory and the 1915 estimate of the U S Census Bureau

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA Montgomery, July 10 Chairman, Dr W H Sanders, Montgomery

ALASKA Juneau, July 5 Sec, Dr H C De Vighne, Juneau

ARIZONA Phoenix, July 5 6 Sec, Dr John Wix Thomas, 306 Goodrich Building, Phoenix

COLORADO Denver, July 4 Sec, Dr David A Strickler, 612 Empire Bldg, Denver

CONNECTICUT Regular, New Haven, July 11 12 Sec, Dr Charles A Tuttle 196 York St, New Haven, Homeopathic, New Haven, July 11, Sec, Dr Edwin C M Hall, 82 Grand Ave, New Haven Eclectic New Haven, July 11, Sec, Dr T S Hodge, 19 Main S, Torrington

DISTRICT OF COLUMBIA Washington, July 11 13 Sec, Dr Edgar P Copeland, The Rockingham

INDIANA Indianapolis, July 11 13 Sec, Dr W T Gott, 84 State House, Indianapolis

MAINE Augusta, July 6 7 Sec, Dr Frank W Searle, 776 Congress St Portland

MASSACHUSETTS Boston, July 11 13 Sec, Dr Walter P Bowers, 1 Beacon St, Boston

NEW MEXICO Santa Fe, July 10 Sec, Dr W E Kaser, East Las Vegas

NORTH DAKOTA Grand Forks, July 4 Sec, Dr G M Williamson, Grand Forks

OKLAHOMA Oklahoma City, July 11 Sec, Dr P V Smith, 502 Daniel Bldg, Tulsa

OREGON Portland, July 5 7 Sec, Dr L H Hamilton, Medical Bldg, Portland

PENNSYLVANIA Philadelphia and Pittsburgh, July 11 13 Sec Mr Nathan C Schaeffer, Department of Public Instruction, Harrisburg

RHODE ISLAND Providence, July 6 7 Sec, Dr Gardner T Swarts Room 313 State House, Providence

SOUTH DAKOTA Deadwood, July 11 Sec, Dr Parl B Jenkins, Waubay

UTAH Salt Lake City, July 3 Sec, Dr G F Harding, 407 Templeton Bldg, Salt Lake City

VERMONT Burlington, July 11 13 Sec, Dr W Scott Nay, Underhill

WASHINGTON Tacoma, July 4 Sec, Dr C N Suttner, Walla Walla

WEST VIRGINIA Charleston, July 11 Dr S L Jepson, Charleston

Graduate Medical Classes in North Carolina

According to a letter from Dr W S Rankin, secretary of the North Carolina State Board of Health, and to later news reports, a novel scheme for bringing graduate medical instruction where it is more readily accessible to physicians has been established in North Carolina Under the auspices of the state board of health and the state university, since June 5, classes have been held in six cities of North Carolina to be continued for seventeen weeks The classes in each city have at present from eight to fifteen members The course is opened each week at 11 a m, with a lecture covering one hour and a clinic of two hours The instructor is in Raleigh on Monday, and in Weldon, Tarboro, Wilson, Goldsboro and Selma on the other five days of the week, respectively The course deals with diseases of children, and the instructor is Dr Louis Webb Hill of Boston Another class has since been organized in the western part of the state, the instructor being Dr Jesse R Gerstley, a Chicago physician, who likewise gives lectures and clinics in children's diseases

Each physician enrolled in these classes, after signing an application blank, deposited $20 and agreed to pay a further sum should additional funds be necessary to cover the expenses of the course It was understood that the University of North Carolina was to assume all financial obligations and to return to those registered any receipts in excess of actual expenses It was also understood that the university would give proper academic credits to those who attended 85 per cent of the course

The clinics in both of these courses have been generally supplied with patients by the physicians enrolled The patients are not charged for the service, and the classes are given an opportunity to observe the later methods of diagnosis and treatment Thus far sufficient and valuable material for the conducting of the clinics has been readily found

In planning a course of home study, four elements had to be considered there were needed a class room, an instructor, clinical material and a class of physicians With these four elements provided, graduate work could be done anywhere The idea of these classes grew out of the necessity for some graduate training among the general practitioners who from the nature of their work and practice, or because of small incomes, found it impossible to go to distant cities or abroad for graduate instruction, or to pay the enormous expense involved The average practitioner, from an income ranging from $1,000 to $1,800, is not able to pay the price for such instruction In the two classes about 130 physicians have been enrolled Under the old plan these physicians would have paid between $400 and $500 each, or a total of at least $52,000, for their instruction, they would have been required to leave their practice while studying, and would possibly have received even less instruction than the new plan provides with its outlay of approximately $4,000, and the physician is free to study at home By this arrangement doctors may attend lectures and clinics without interrupting their general practice If the two classes now being conducted prove to be as successful as conditions now indicate, other classes will be organized, and other subjects will be taught

Hawaii January Report

Dr R W Benz, secretary of the Hawaii Board of Medical Examiners, reports that four candidates were licensed, Jan 25, 1916 The following colleges were represented

College	Year Grad	Total No Licensed
Rush Medical College	(1907)	1
Johns Hopkins University	(1914)	1
University of Pennsylvania	(1898) (1899)	2

Arkansas Reciprocity Report

Dr T J Stout secretary of the State Medical Board of the Arkansas Medical Society, reports that six candidates were licensed through reciprocity from March 24 to May 9, 1916 The following colleges were represented

College	Year Grad	Reciprocity with
College of Physicians and Surgeons Chicago	(1908)	Illinois
College of Physicians and Surgeons Keokuk	(1875)	Oklahoma
University of Louisville	(1914)	Tennessee
Memphis Hospital Med Coll (1909) Mississippi,	(1911)	Oklahoma
Vanderbilt University	(1911)	Tennessee

Arizona April Report

Dr John Wix Thomas, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, April 4-5, 1916 The total number of subjects examined in was 10, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 9, all of whom passed The following colleges were represented

PASSED

College	Year Grad	Per Cent
College of Physicians and Surgeons, Chicago	(1897)	78 6
Northwestern University	(1902)	77 3
Rush Medical College	(1914)	80 1
Johns Hopkins University	(1901)	83 2
University of Minnesota	(1912)	82 4
University Medical College, Kansas City	(1904)	77 4
Washington University	(1913)	81
Memphis Hospital Medical College	(1892)	76 3
McGill University	(1890)	77 2

Ohio April Reciprocity Report

Dr George H Matson, secretary of the Ohio State Medical Board, reports that 18 candidates were licensed through reciprocity, April 4, 1916 The following colleges were represented

College	Year Grad	Reciprocity with
Rush Medical College	(1914 2)	Illinois
Fort Wayne College of Medicine	(1896)	Indiana
University of Louisville	(1902)	W Virginia
Baltimore Medical College	(1911)	Maryland
College of Physicians and Surgeons, Baltimore	(1913)	Maryland
Tufts College Medical School	(1904)	Illinois
University of Michigan Medical School	(1902)	New York
Univ of Michigan Homeopathic Med School	(1914)	Michigan
Washington University	(1901)	Missouri
Albany Medical College	(1900)	New York
Cornell University	(1907)	New York
University and Bellevue Hosp Med College	(1915)	New York
Medico Chirurgical College of Philadelphia	(1906)	Penna
University of Pennsylvania	(1904)	Penna
Meharry Medical College	(1912)	Texas
Marquette University	(1915)	Wisconsin
University of Palermo	(1906)	Missouri

District of Columbia April Report

Dr Edgar P Copeland secretary of the Board of Medical Supervisors of the District of Columbia reports the oral and written examination held at Washington, April 11-13, 1916 The total number of subjects examined in was 16, total number of questions asked 80, percentage required to pass 75 The total number of candidates examined was 7 of whom 4 passed and 3 failed The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Georgetown University (1909) 79	(1915)	80 1
Chicago Hospital College of Medicine	(1915)	82 1
University of Michigan Medical School	(1894)	75 8
FAILED		
Baltimore Medical College	(1905)	69 5
Medico Chirurgical College of Philadelphia	(1915)	73 1
Temple University	(1915)	70 3

Two candidates were licensed through reciprocity from Jan 31, 1916, to March 30, 1916 The following colleges were represented

College	Year Grad	Reciprocity with
American Medical Missionary Medical College	(1902)	Maryland
College of Physicians and Surgeons, Memphis	(1911)	Georgia

Book Notices

American Public Health Protection By Henry Bixby Hemenway, A M M D Cloth Price $1 25 net Pp 283 Indianapolis Bobbs Merrill Company 1916

This work is for laymen, and gives such an account of public health work in the United States as will bring home to its readers first, the economic value of an efficient service and, secondly, that the latter can be obtained only by the employment of full time specialists in hygiene

Games and Exercises for Mental Defectives By Hilda A Wrightson Cloth Price $1 25 Pp 100 with illustrations Cambridge Mass Caustic Claflin Company 1916

This little book contains explicit instructions (accompanied, when necessary, by diagrams) for playing 115 extremely simple games and exercises adapted to the feebleminded Dr H H Goddard well says in his introduction

'The teacher unfamiliar with feeble minds will perhaps think some of the games here described of no value It is always hard for the more intelligent to understand the less intelligent for normal teachers to understand defective children It should be remembered that the joy of accomplishment is one of the greatest joys of life for all grades of intelligence It is the fact that the list includes games adapted to the simplest minds which constitutes one of its excellencies'

Nervous Children Prevention and Treatment By Beverley R Tucker M D Professor of Neurology and Psychiatry, Medical College of Virginia Cloth Price $1 25 net Pp 147 Boston Richard G Badger 1916

The intention of this book is praiseworthy, but in execution it apparently fails On the one hand, those readers who are willing to devote some study to causes and principles deserve a more thorough and painstaking exposition than these few pages afford, and on the other, the needs of the readers who want merely explicit advice covering the details of the care and management of nervous children seem to be no more adequately met in the offhand, sketchy treatment accorded to practical subjects

Studies in Ethics for Nurses By Charlotte A Aikens Cloth Price $1 75 net Pp 320 Philadelphia W B Saunders Company 1916

This is a practical book written by a practical nurse and teacher The first section discusses the nurse herself, her personality, conduct and duty, with particular consideration of the qualifications needed for success in her profession In the second part the problems of the training school are taken up, while the third part is devoted to the nurse after graduation The plan of the book is to state a principle and follow with a discussion of a number of concrete problems involved, supplementing this discussion with the proposal of a number of pertinent questions The carrying out of this plan is most satisfactory

Medicolegal

Validity of City Milk Ordinance with Higher Requirements than Statute

(Kansas City v Henre (Kan), 155 Pac R 548)

The Supreme Court of Kansas, in affirming a judgment in favor of the city, holds that a city ordinance, passed in pursuance of legislative authority to make regulations to secure the health of the city, which fixes a higher standard of food value in the milk sold within the city than is provided in statutory regulations as to the sale of milk throughout the state, and which imposes a more severe penalty for the violation of the ordinance than is annexed by the legislature for the violation of the statute on the same subject, is not repugnant to the laws of the state, unreasonable or invalid The court says that there is a conflict in the authorities on this question, but, under the view which has been taken in Kansas, additional regulations and superadded penalty are not repugnant to the state statute, nor can they be deemed unreasonable It may be necessary to make additional requirements and stricter regulations and to impose more severe penalties in a congested district like a city than are made and enforced in a rural district

Malpractice in Failure to Change Treatment

(Van Boskirk v Pinto (Neb) 155 N W R 889)

The Supreme Court of Nebraska reverses a judgment for $1,500 obtained by the plaintiff for alleged malpractice in the diagnosis and treatment of an injury to his ankle caused by a fall of about 15 or 18 feet, May 4 The court believes that the defendant's substantial rights were injuriously affected by the submission to the jury of the question as to negligence in the original examination and diagnosis The court is convinced that if the defendant was guilty of any negligence at all it was in failing to change his manner of treatment after he had reason to believe that a fracture had occured It appeared that another physician was called first and that he and the defendant diagnosed the injury as being a severe sprain The ankle was placed in splints and the patient placed in charge of a nurse who was instructed to pour liniment on it The other physician then gave the case over to the defendant Three or four days after the injury the splints were removed the foot placed on a pillow with a sandbag to support it and the nurse was directed to massage the ankle and move it as much as the patient could stand The patient remained under the defendant's care in the hospital seventeen days At the time he left he was unable to bear his weight on the injured foot without pain or to walk without crutches and finally the foot remained fixed in such a position that the front part of it was left at a downward angle from the normal position July 11, he suggested to the defendant that he would like a roentgenogram taken, and one was It disclosed that the fall had caused a slight impacted fracture of the forward part of the astragalus and a rupture or raising of the periosteum on the posterior portion of this bone The defendant testified that he had an idea on the Saturday following the injury that there was a fracture of the articular ends of the bones, and that from May 11 he treated the case with the view that the ankle was fractured etc The plaintiff's petition, after pleading negligent diagnosis, in substance alleged that the defendant wrongfully advised him that his injuries were being properly treated and that he would soon recover the use of his foot and ankle and that relying thereon, he was induced to allow the defendant to continue to treat the injuries until about June 22 when the plaintiff was discharged from further treatment and that if the defendant had properly diagnosed and treated the injury he would have wholly recovered in two or three months and would have had the unimpaired use of his limb The court says it is with some hesitancy that it has come to the conclusion that under these allegations proof of negligent and unskilful treatment after the defendant had reason to believe a fracture had occurred, might be made There was sufficient evidence on this point to go to the jury

The question whether a physician and surgeon, after having reasonable grounds to believe that he made a mistake in diagnosis and that a fracture existed in a case in which the injury had been considered by him to be merely a sprain, exercised reasonable and proper care and skill after he reached such conclusion, is a matter, under proper pleadings and instructions, for a jury to determine A physician or surgeon, when he accepts employment to treat a patient professionally, must exercise such reasonable care and skill in that behalf as is usually possessed or exercised by physicians or surgeons in good standing, of the same system or school of practice, in the vicinity or locality of his practice, having due regard to the advanced state of medical or surgical science at the time, and he is not liable for a mistake in judgment made in diagnosing a physical injury where he used such ordinary and reasonable care and skill, even though his judgment may be erroneous

Negligent Treatment of Child—A Competent Witness

(*Van Sickle vs Doolittle (Ia), 155 N W R 1007*)

The Supreme Court of Iowa reverses a judgment on a verdict directed for the defendant, a homeopathic physician who was charged with malpractice in the treatment of a girl 9 years and some months of age The girl appeared to have been in good health until Saturday, and then complained only of a headache On Sunday the defendant was called and treated her until Wednesday afternoon, when she died It was alleged that he failed to exercise ordinary care and skill in endeavoring to cure her of her ailment, in that he "neglected to see her with such frequency as the case demanded, by neglecting to give her proper medicine and skilful treatment, by neglecting and refusing to do anything for her relief and cure when it became apparent that she was in a dangerous and precarious condition, and by unskilfully and negligently administering to her certain medicine which was injurious to her at the time of its administration, and which the defendant, if he had used proper care and skill, ought not to have administered to said child in the circumstances at said time existing" The defendant testified, among other things, that he left bryonia in one vial, and a dilution of aconite and gelsemium in another, could not tell exact strength, thought there was the equivalent of about two thirds of a drop of tincture of aconite, that a homeopathic physician never gives medicine for diseases, but on the indications, etc The court says that nothing short of setting out the evidence in detail could well illustrate the manner of the defendant's diagnosis of the condition and symptoms of the child, the dilatoriness with which he attended her when summoned to her bedside, his peculiar method of preparing the medicine to be administered, and his utter lack of appreciation of his obligation to his patient when in sore need of relief The jury might well have found that after Tuesday morning her ailment was serious, and yet that the defendant gave her scant examination and apparently was unable to say whether she was afflicted with typhoid fever, brain fever, smallpox, gastritis, influenza or paralysis He might then have been found to be negligent in diagnosing her condition or symptoms and therefrom ascertaining her ailment Not attending the child for several hours after undertaking to do so, when summoned, in view of her condition, might well have been found to be negligence on his part His testimony left much uncertainty as to the quantity and quality of any remedy administered, and whether it was appropriate to the symptoms manifested, and the jury might have found this to be in such infinitesimal quantities as to have no physiologic effect on her system The court has little difficulty in finding that the evidence was such as to carry the issues as to the defendant's negligence on the first three grounds of alleged negligence to the jury Its only difficulty is in determining whether or not death might have been found to be in consequence of such negligence This is always a question of probability in such cases, for no one can say absolutely whether a patient, even though properly treated, would have survived The inquiry necessarily is whether recovery would have been the more likely in that event and a cure in all reasonable probability effected After a recital of the conditions and symptoms of the girl from Saturday until the time of her death, as shown by the evidence, including the treatment given by the defendant, a physician of the regular or allopathic school was asked what, in his opinion, as indicated by the symptoms revealed in the question, the child was probably suffering from The court holds that it was error to sustain an objection to the question as above, and also to it with all references to medicines administered withdrawn, on the ground that the witness was incompetent because he belonged to a different school

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Society Proceedings

COMING MEETINGS

Montana State Medical Association, Miles City July 12 13
Washington State Medical Association, Seattle, July 12 14

THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Third Annual Meeting, held in Washington, D C, May 11 12, 1916

The President, Dr James W Jobling, Nashville, Tenn, in the Chair

Relation of Lipoids to Immune Reactions

Dr James W Jobling, Nashville, Tenn Peterson and I have shown that bacteria are protected from the action of ferments by the unsaturated fatty acid compounds present in the cells, and that oxidizing agents such as iodin, hydrogen peroxid, etc, will destroy this protective action We also found that soaps injected intravenously into guinea-pigs in proper doses produce the symptoms and postmortem findings of anaphylaxis We investigated, first, the action of lipoids when given with the intoxicating dose of antigen, and secondly, the influence of increasing the antitryptic power of the serum We found that increasing the antitryptic power of the serum, and the addition of soaps to the intoxicating dose, enabled the animal to resist several times the amount of the specific protein fatal for the controls, while a smaller dose of the antigen was required when lipoid-free proteins were used The removal of lipoidal antiferments from serum permits the formation of toxic substances which we have termed "serotoxins" These toxic substances are formed through the action of the serum proteases on the serum proteins as soon as the protective lipoidal substances are removed The lipoids of the body are of far reaching consequence in almost all vital cellular phenomena

Inadequacy of the Anaphylatoxin Theory of Anaphylaxis

Dr Richard Weil, New York The test tube reaction differs from the anaphylactic reaction in the living animal or in the suspended uterus According to the physical theory, the reaction is an expression of the alternation of cellular equilibrium which results when external antigen is brought into contact with cellular antibody In guinea-pigs the conclusion seems unavoidable that anaphylactic death is due to a cellular reaction, and that the serum plays no role therein There is no question, on the other hand, that during the prolonged or delayed shock of the dog, striking alterations occur in the chemical composition of the blood These changes are due in the first instance to the freeing of protease, as a result of the reaction of the sensitized cells to the antigen It still remains to determine whether the changes in the serum produced through the activity of the protease are really the cause of the latter symptoms, or merely accompaniments of the shock in this species Even in the former event, the primary step in the entire reaction, namely, the discharge of protease, would be cellular

The Protein Poison

Dr Victor C Vaughan, Ann Arbor, Mich Casein yields a large percentage of protein poison which, after the removal of all traces of mineral acid, is strongly acid in and of itself It does not give the ninhydrin test until after being split up with acid The poison gives a skin reaction in all persons, and it is not without harm when administered by the mouth Animals can be poisoned acutely or chronically by oral administration In chronic poisoning by feeding, extensive fatty degeneration results The protein poisons from diverse proteins are not identical The protein poison from casein combines with certain unbroken proteins In this combination the acidity of the poison is neutralized and its physiologic action diminished The protein poison may be extracted from the tissues of animals killed with it, and its presence demonstrated and amount roughly estimated by intravenous injections of guinea-pigs

Specific Character of Immunity Reactions

Dr E C L Miller Richmond Va For many years it has been recognized that immunity reactions are specific However, when more detailed study is given to some of these immunity reactions their specific character seems less sharply defined The specific character of a protein, at least for the anaphylactic reaction and probably for other biologic reactions, depends, not on the protein as a whole, but on certain parts or qualities or chemical groups in the protein molecule The reason biologically related proteins react similarly is that they have inherited certain common groups from a common ancestor, but it should cause no surprise that entirely unrelated species should occasionally possess common groups Immunologists have been inclined to assume that antigen and antibody are related to each other in an absolutely specific way, and if indications of an antibody were found, it was assumed that it must have been produced by its own antigen There have been plenty of instances in which no such antigen could be found, but they were ignored

DISCUSSION

Dr H Gideon Wells Chicago In studying the fundamental principles of biologic processes, one must reduce the elements involved to the simplest possible Unfortunately we apparently cannot get below the whole protein molecule, as one end of our reactions, and generally must use the warm blooded mammals as the other side of the equation The best we can do, therefore, is to use pure protein Those proteins which differ greatly from the majority of proteins are especially favorable materials for purification, such as noncoagulable ovomucoid of egg white, or alcohol soluble proteins of the grains Using such isolated proteins, we have found evidence that, delicate as the specificity of immunologic reactions seem to be, immunologic differences do not seem to occur between proteins that cannot also be differentiated chemically By comparative study of different proteins isolated from the hen's egg by anaphylaxis I was able to distinguish five proteins definitely distinguishable from one another by this means Proteins of the egg that cannot be differentiated by chemistry cannot be differentiated by anaphylaxis

Dr John A Kolmer, Philadelphia More and more importance is being attached to the role of the lipoids in this field It has been proved that toxic substances may be prepared of various animal and vegetable proteins by the method employed by Dr Vaughan and that likewise toxic substances can be produced in normal and immune serums by the addition of such substances as kaolin and agar capable of producing anaphylactic-like symptoms and lesions in experimental animals, but it is not yet clear what relations these observations bear to the mechanism of anaphylaxis I should like to ask Dr Vaughan if he is prepared to make any further statement in regard to the relation between his protein poison and the mechanism of anaphylaxis

Dr Victor C Vaughan, Ann Arbor, Mich I observed the appearing and disappearing wave of toxicity in serums being incubated with agar and other foreign bodies I spent much time in trying to measure these waves and catch the rhythm of the toxicity, but without results I am not yet ready to abandon the idea that a protein poison is formed in anaphylactic shock No one can tell whether this is due to a chemical or a physical process I can conceive that a body so complex as the protein molecule may be dissociated and a poisonous action developed even by high dilution If so stable a body as sodium chlorid can be broken up into its

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Leukocytosis and Its Importance as a Diagnostic Sign in Vaccine Treatment

Dr Joseph Head, Philadelphia I have taken fifty-four of my vaccine patients and made 714 separated blood counts containing complete data Thirty-three of these fifty-four cases did not in the course of the treatment give a leukocyte count of over 20 000, but twenty-one cases did show transitory leukocyte counts of over 20 000 that jumped up like a rocket, only in a few days to sink back to 8,000 or 4,000, with either no symptoms to speak of or an indisposition so slight as to be almost negligible This series of cases certainly indicates that a transient leukocyte count cannot be considered of itself an infallible sign of pus or even of semiacute inflammation of a serious nature Persistence of the leukocytosis, accompanied with a great reduction in the number of red cells and hemoglobin would indicate a condition of an entirely different significance Blood count work is of great value in determining vaccine dosage In one or two cases in which the infections were chronic or general, the blood counts were of no value as a guide, but ordinarily they will give accurate sensitive warning of an oncoming reaction There is, however no one special phase to be looked for as peculiarly diagnostic, it is the way the blood acts generally under the treatment that should be noted If the hemoglobin red cells and white cells are fairly normal in number, size and staining capacity or if the constituents of the blood under vaccine treatment show a steady improvement, the vaccine dosage can be maintained or increased, but if the dose of vaccine is followed either by leukocytosis or leukopenia or the red cells or hemoglobin drop off, or if poikilocytes or nucleated red cells appear, the vaccine dosage should be watched with great caution and if unfavorable symptoms develop, the vaccine should be stopped, at least temporarily

Action and Therapeutic Effects of Leukocytic Extract

Dr W E Richard Schottstaedt Toledo Ohio This work has been carried on with leukocytic extract prepared from leukocytes obtained from the blood of normal animals Subcutaneous injections in normal individuals and patients suffering from acute infections produce a marked leukocytosis The leukocyte increase is often 300 per cent, and is highest ten or twelve hours after the administration of the extract The increase in the neutrophil elements is particularly marked, and coincident with it is a less marked increase in the eosinophil cells Clinically, striking beneficial results have been obtained following its use in acute infections such as furunculosis pneumonia, acute bronchitis and acute tonsillitis Chronic affections have had a less striking clinical improvement, though the leukocytic increase has been as marked as in the foregoing cases

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it was interesting to note the marked polymor-
clear count that followed, as well as the marked leuko
tosis Leukocytic extract was prepared by us, and we find that we get the best results by the use of distilled water Out of from fifteen to eighteen cases of pneumonia, in which there was a decided leukocytosis, not one patient was benefited by the use of the leukocytic extract

Anaphylactic Food Reactions in Dermatology, With Special Reference to Eczema

Dr Albert Strickler, Philadelphia Fourteen food products have been tried out in the attempt to demonstrate their relation to various skin diseases The method of injection employed was the endermic one The dose used was 0 1 c c In none of our cases was there any manifestation of soreness of the arm or enlargement of the associated lymph glands We studied forty-six cases of eczema, ten cases of urticaria, thirteen of acne, and eleven of psoriasis From this study we conclude that anaphylactic skin tests are of value in the etiologic diagnosis and in the treatment of various diseases of the skin These reactions find their greatest value in eczema In chronic urticaria, acne and psoriasis, the tests are disappointing Approximately 20 per cent of individuals affected with eczema are not sensitive to any of the common foods Normal persons do not react to these tests

Allergic Skin Reactions as an Index of Immunity

Dr John A Kolmer, Philadelphia Our studies demonstrated that there is no experimental support for the theory that allergic skin reactions may be taken as an index to resistance and immunity, so far as it is possible to determine the presence of antibodies in vitro

Comparative Studies of the Wassermann and Hecht-Weinberg Reactions in Syphilis, With Special Reference to Cholesterinized Antigens

Dr John A Kolmer, Philadelphia In 82 per cent of serums examined, the results of the Hecht-Weinberg and Wassermann reactions were the same In fifteen per cent the Wassermann was negative and the Hecht-Weinberg test was positive Of these reactions the positive Hecht-Weinberg tests were largely correct and occurred mostly with the serums of syphilitic persons under vigorous treatment, in 3 per cent the Wassermann was positive and the Hecht-Weinberg was negative, all of these occurred with the serums of persons in the latent tertiary stages of syphilis With the serums of persons known not to be syphilitic, the Hecht-Weinberg test showed about 10 per cent falsely positive reactions, most of these reactions occurred with the alcoholic extract of syphilitic liver, and fewest with the extract of acetone insoluble in lipoids All of these serums yielded negative Wassermann reactions with all antigens The *Hecht-Weinberg* test was found unreliable in the diagnosis of syphilis on account of the tendency to yield proteotropic reactions, it was more delicate than the Wassermann test, however, and had its greatest value in a negative reaction as a control on treatment with the serums of known syphilitics

DISCUSSION

Dr Edward B Vedder, Washington, D C I wish to ask Dr Kolmer whether he has used antigen in a dilution of 1 6 instead of the customary dilution of 1 10, as recommended by Walker in order to determine whether syphilitics were cured I should also like to ask if the use of antigen in this quantity (1 6) in the ordinary Wassermann would not furnish as good evidence of a cure as that obtained by the use of the Hecht-Weinberg test

Dr Oscar Berghausen, Cincinnati I have been in the habit of using cholesterinated antigens, Noguchi's and others, and it is possible to get a reaction, especially in the concentrated reactions My experience has been that after determining a positive Wassermann, using the same technic with the Hecht-Weinberg method, positive reactions were obtained The results seem to be entirely dependent on the antigen used My experience has led me to believe that the Hecht-Weinberg test is the real one and the Wassermann is the control test

Dr John A Kolmer, Philadelphia I have not used Dr Walker's method with large doses of cholesterinized antigen Owing to the antilytic properties of cholesterin I did not employ any of these extracts unless the anticomplementary unit of each was at least twenty times greater than the antigen unit In a study of the nonspecific reactions observed with the Hecht-Weinberg technic with normal serums, all the serums had been likewise *subjected to the Wassermann* test, and all reacted negatively with all antigens, including the cholesterinized extracts

(To be continued)

AMERICAN PEDIATRIC SOCIETY

Twenty Eighth Annual Meeting held in Washington, D C
May 8 10, 1916

The President, Dr Rowland Godfrey Freeman, New York, in the Chair

Physiologic Action of Atmospheric Conditions

Dr Frederick S Lee, New York Except under extraordinary conditions, the harmfulness of expired air is not due to its chemical compounds, but to certain physical factors If it is not too moist, too warm or too still, air is not harmful When an external temperature is fairly comfortable, an elevation of it, especially when accompanied by humidity, is deleterious, and this deleteriousness is more pronounced when the air is stagnant An electric fan will obviate some of the bad effects, but it is better to reduce the temperature, and the good effect is assisted by reduction of the humidity Cool, dry air, in motion, is the most physiologically wholesome aerial envelope for the body Uniformity should be avoided, there should be frequent and marked changes Artificial ventilating systems should be combined with window ventilation

Mode of Infection in Pyelitis of Infancy

Dr Richard M Smith, Boston In favor of the ascending route is the greater frequency of pyelitis in girl babies, but aside from this, there is no experimental or clinical evidence in its support The hematogenous route is supported by clinical and experimental evidence, which shows that the colon bacillus may enter from the gastro-intestinal tract into the blood and be excreted by the kidney, causing inflammation at the point of excretion, namely, the pelvis of the kidney Bacteria may also gain entrance to the blood from the genital organs, especially in the female, in whom exposure to contamination is particularly easy The anatomic difference between the organs in the two sexes explains the greater frequency of the disease in female infants

DISCUSSION

Dr Henry F Helmholz, Evanston, Ill In some experiments in animals, I found that in three out of twelve cases I was able to show, by means of the roentgenogram taken immediately after the injection, that there was a reflux from the bladder into the ureter

Diet and Growth in Infantile Scurvy

Dr Alfred F Hess, New York There is a gradual falling off in growth at about the seventh or eight month in many babies who have been fed on pasteurized milk Many of these infants do not show the typical symptoms of scurvy Tachycardia however, is an early and typical symptom Growth in both length and weight is markedly affected, both finally ceasing When orange juice, orange peel juice or potato water was added to the diet, there was often a supergrowth, which continued until the normal weight and length for the infant's age was reached, when the rate of growth became normal Following the discontinuance of this antiscorbutic food, although the infants sometimes continued to gain for a month or two, there was a gradual flattening of the curve of growth As soon as orange juice was again given, however, a sharp gain was manifested, showing that the babies were receiving some essential constituent of the food that had been lacking Putting these babies on unpasteurized milk had the same effect as giving fruit juice with the pasteurized milk Orange juice and orange peel juice did not lose their antiscorbutic elements by being boiled, although milk did While pasteurized milk affords security against infection, it must be considered as an incomplete food, lacking the elements necessary to proper nutrition and growth This is probably the reason that infants fail to gain at about the seventh or eighth month of life, and begin to grow better as soon as fruits and vegetables are added to their dietary During the early months, they are probably protected by the antiscorbutic elements inherited from their mothers One should commence giving them orange juice at about the age of 1 month, so as to prevent the development of the scorbutic state It is probable that other factors than lack of growth are concerned in the production of infantile scurvy A diet may possess growth-producing properties, and yet be unable to afford a means of preventing or curing scurvy

DISCUSSION

Dr L Emmett Holt New York Unless we who are interested in the production of good milk and certified milk make strong our disapproval of the general pasteurization of all milk it will not be many years before we shall be face to face with the fact that it will be impossible to secure any but pasteurized milk We see bad effects from its use less frequently among the babies of the poorer people, because they give other food than milk to their babies much earlier than has been customary among the better class of people The treatment to counteract this scorbutic tendency should be begun early and continued

Dr Charles M Herrman, New York If orange juice, when boiled, retains its antiscorbutic power, why does simply heating the milk destroy the antiscorbutic elements in it?

Dr Samuel S Adams, Washington, D C Within the last ten days, I have had cases of scurvy in children who had been fed on the best pasteurized milk delivered in Washington I am not opposed to home pasteurization under proper supervision, but I am opposed to commercial pasteurization Many dealers resort to pasteurization in order to sell bad milk

Dr A D Blackader, Montreal, Que This winter I had two patients brought to my office for obscure symptoms, partly nervous, and associated with defective growth There was rapid disappearance of all the symptoms under the use of orange juice and unpasteurized milk

Dr Henry L Shaw, Albany, N Y Some years ago, I was opposed to pasteurization, but during the last year I have been in a position to see the reports of certain milk-borne epidemics that came to the New York board of health, and my opinion has changed completely There were sixteen epidemics outside of New York City which were positively traced to the milk I do not think that tuberculosis is the greatest danger from the use of raw milk Sore throat, scarlet fever and diphtheria are carried in this way I used to advise the giving of orange juice after the third month, but shall recommend henceforth that it be given earlier

Dr Percival J Eaton, Pittsburgh Commercially pasteurized milk is not all real pasteurized milk In many cases, it is only sterilized The cases that come to my mind were all in babies fed on so-called pasteurized milk We get better results by using the raw certified milk if the certification is properly done, than by having all milk pasteurized

Dr S M Hamill, Philadelphia We should come to the defense of properly prepared raw milk The tendency to make pasteurization apply to all grades of milk is so manifest that it is incumbent on us to take some action very promptly The medical profession should not recognize the establishment of milk commissions that are absolutely unprepared to do the certification of milk We should state definitely what certification should mean I am in favor of the pasteurization of all milk other than the certified There are dangers from unsatisfactory pasteurization, however, and from improper care of the milk after pasteurization, but they are not so great as from the use of raw milk I have had as many cases of scurvy from the use of raw milk as when pasteurized milk was employed

Dr Henry L Coit, Newark, N J I have discarded the word "pasteurize," because I have found that I can accomplish more with mothers by using the word "refine" The most important thing is to obtain initially clean milk I, too, am opposed to commercial pasteurization

Dr Henry Heiman, New York Whether we have been giving milk raw or pasteurized, scurvy has been discovered, just the same Pasteurized milk is not the proper food for children and it will soon cease to be pasteurized if it is not kept properly after the bottle is opened Last year I gave 5 drops of orange juice in water with sugar at the age of 1 month It contains the salts necessary for growth

Dr Philip Van Ingen, New York Since the pasteurization of milk has become general, we do not read much of an increase in the death rate from scurvy, but we do read of the decrease in the death rate from diarrheal diseases

Dr Maynard Ladd New York I have seen half a dozen cases of scurvy develop among babies who were presumably fed on raw milk, but on investigation, I found that in these cases an error had been made by overheating the milk before giving it to the babies They were really getting pasteurized milk

Dr Alfred F Hess, New York If it is once realized that pasteurized milk is inadequate as a food, there will be fewer cases of scurvy following its use To supply this deficiency, all that is necessary is to give with it either orange juice or potato water Some persons have a predisposition to scurvy In infants, the susceptibility depends partly on the amount of essential substances which the mother had and the food which she took during her pregnancy, and partly on the length of time the infant was nursed Certain substances will stand boiling in a watery solution, such as orange juice, when they will not stand boiling in a medium rich in fats and proteins

The Hospital Care of Premature Infants

Dr L E La Fetra, New York The experimental observations were made at Bellevue, where the police department brings all foundlings I have gone through the records of the last 200 cases, and found thirty in which the infants were saved and discharged with sufficient weight to make it probable that the mothers could care for them successfully One hundred and eighteen died during the first three days Thirty-six per cent of those who lived beyond three days were saved It is most unusual that any baby weighing less than 2½ pounds can be saved The symptoms are extreme muscular feebleness and inability to nurse The mother may have abundant milk and the baby good digestion, but it cannot obtain nourishment on account of its muscular weakness It radiates more heat proportionately than a normal infant, and is very susceptible to temperature changes There is a great tendency to attacks of cyanosis, and great susceptibility to infection A disease, however, is not always fatal So far as possible, the condition of intra-uterine life should be simulated in treating these babies They should be kept in an even temperature approximating that of the human body, and shielded from all sorts of external shocks The skin should be protected from contagion and the eyes from light The inhaled air should be moist, warm, and as free as possible from germs The food should be such as to require the least possible digestive effort The most satisfactory incubator is that devised by Edwin A Cragin but I think that usually it is not a good thing to put the baby in an incubator It is better to set aside a small room and have it kept at the proper temperature Such a room is also of advantage in managing feeble infants that are not premature, but whose temperatures are subnormal The food must be put into the baby's mouth, and often into its stomach It is best to use the Buck feeder, which teaches the baby to suck Breast milk mixed with whey is the best food

Further Experience with Homogenized Olive Oil Mixtures

Dr **Maynard Ladd**, Boston The method dealt with is based on the substitution of olive oil for cow's fat in milk modifications, in order to get rid of the volatile fatty acids of cow's milk, which, in cases of fat intolerance and difficult feeding, with malnutrition, were assumed to be sources of irritation and indigestion The emulsion of olive oil is brought about by the use of the homogenizing machine invented by M Caulin of Paris In a series of thirty-seven cases which had been unsuccessfully fed on an average of 6 3 months each, with a gain of only 5 ounces a month, successful results were obtained by the use of this method Over a period of 4 7 months in the same series, the rate of gain was increased to 18 15 ounces a month, with a corresponding improvement in the general condition of the patients This represents a gain of 363 per cent over that of the previous feedings Favorable results were also obtained in another series of cases of convalescents from infectious diarrhea, the usual loss of weight being considerably diminished

A Method for Preparing Synthetic Milk for Studies of Infant Metabolism

Drs **Henry I Bowditch** and **Alfred W Bosworth**, Boston Better control of the elements entering into the composition of infant feeding in liquid form led to experiments, with the subsequent result of the preparation of synthetic milk for the study of infant metabolism The method consists in four steps First, the preparation of isolated food materials for use in making milk Second, the reassembling of these materials to give a mixture of the desired percentage composition Third, the emulsification of the fat and the solid or insoluble constituents entering into the composition of the food Fourth, the pasteurization or sterilization of the food, after it has been made In appearance, this synthetic milk strongly resembles the natural food, the emulsion being quite permanent The cream rising after long standing may be easily shaken back into the mixture

Some Early Symptoms Suggestive of Protein Sensitization in Infancy

Dr **B R Hoobler**, Detroit When a sufficient amount of unaltered protein is absorbed, a reaction takes place, known as protein sensitization This is not of an explosive character, as in acute anaphylaxis, but is suppressed The symptoms may be divided into five groups, relating, respectively, to the skin, the upper respiratory tract, the lower respiratory tract, the digestive system, and the nervous mechanism These symptoms come and go with great rapidity Even minutes will sometimes calculate the length of their stay Often but one will appear, and later, in the same child, there will be different manifestations The symptoms gradually increase in severity and variety They appear more frequently, and remain longer Some continue throughout the lifetime of the individual, but others disappear Many of these are also symptoms of other common diseases When, however, they appear and reappear many times in the same infant early in its life, one should be on the lookout for protein sensitization It is important that the condition be recognized early, then it need not go on to its extreme manifestations

DISCUSSION

Dr **Oscar M Schloss**, New York I have had a large number of skin tests made in infants with chronic nutritional disorders, with inconclusive results It has been demonstrated in many instances that biologically perceptible protein may occur in the blood stream after the ingestion of certain protein foods, and that this is excreted in the urine In animals, the absorption of this unaltered protein leads to sensitization, but this has not been demonstrated to occur regularly in human beings Often several members of the same family are affected with the same allergic condition This probably explains the idiosyncrasies of some children to foods they have never before ingested There must be in human beings some state of the tissues, either inherited or acquired, that is different from the definite sensitization of an animal by a foreign protein I have had four cases of asthma that had a definite relation to food In all, desensitization was accomplished with good results

Dr **Fritz B Talbot**, Boston The condition of anaphylaxis that gives symptoms of asthma is a relatively rare one In looking through the hospital records, I found very few cases of asthma that might have been of anaphylactic origin, but more among the skin cases I have not been able to find any connection between erythema and anaphylaxis The mild cases have been due to external irritation In some cases of urticaria, the symptoms are all due to anaphylaxis I have been unable to connect miliary rashes with any anaphylactic phenomena The symptom of rough skin may sometimes be connected with anaphylaxis, but it may also be connected with deficient thyroid secretion There are two forms of eczema, one of which apparently has no connection with anaphylaxis and is cured by merely reducing the fat in the food In the other, Dr Schloss and others have found definite skin tests We believe that these cases are of anaphylactic origin, but they do not always do well when we take out the food that gives the skin test Of the symptoms connected with the respiratory system, wheezing, when there are rales in the chest, with no fever and nothing else to explain it, is of anaphylactic origin, but what we should make our diagnosis on are the typical rales of chronic bronchitis and, coincidently with these, a prolonged expiration In the majority of cases, croup is not of anaphylactic origin, but in a few instances, there is no question that it is There is also no question that some digestive disturbances are of anaphylactic origin The symptom of restlessness is usually due to too many visitors and too much grandparent

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Diseases of Children, Chicago

June, XI, No 6, pp 405 473

1 *Congenital Obliteration of Bile Ducts, Diagnosis and Suggestions for Treatment Report of Case J B Holmes, Baltimore
2 *Nonprotein Nitrogenous Constituents of Blood and Phenolsulphonephthalein Test in Children J S Leopold and A Bernhard, New York
3 *Cutaneous Reaction From Proteins in Eczema K D Blackfan, Baltimore
4 Case of Nonparasitic Chyluria, Chronic Nephritis, in Child A Hymanson, New York
5 *Skin Manifestations With Streptococcus Infection A B Schwartz Chicago
6 *Case of Acute Myelogenous Leukemia in Infant J H M Knox, Jr, Baltimore

1 **Obliteration of Bile Ducts**—Congenital obliteration of the bile ducts is said to be not an extremely rare disease Over 100 cases have now been reported Holmes' patient died when 15 weeks of age The child's skin had been yellow since birth, his eyes were yellow, and the urine stained the napkin The conditions found at necropsy were these an anomalous arrangement of the hepatic ducts, absence of the common duct throughout the greater part of its extent, an impervious condition of the cystic duct with abnormalities of the gallbladder, and a moderate grade of cirrhosis of the liver

2 **Nonprotein Constituents of Blood and Phenolsulphonephthalein Test in Children**—In a series of fifty children free from evidences of renal disease, chemical examination of the blood gave the following results the total nonprotein nitrogen varied between 19 and 40 mg per 100 c c of blood, the average being 28 mg, the urea nitrogen varied between

8 and 21 mg, the average being 12 mg, the uric acid varied between 0.6 and 3.2 mg, the average being 1.8 mg, the creatinin varied between 0.5 and 4 mg, the average being 1.5 mg, and the phenolsulphonephthalein varied between 50 and 96 per cent, the average being 70 per cent A smaller number (16) of cases with renal involvement were examined In acute nephritis the nonprotein nitrogen constituents were found within normal limits, the phenolsulphonephthalein excretion was diminished In chronic nephritis the nonprotein nitrogen constituents were usually increased while the phenolsulphonephthalein excretion was diminished In passive congestion the nonprotein constituents were normal while the phenolsulphonephthalein was diminished In one case of sarcoma of the kidney with normal urinary findings the nonprotein constituents, with the exception of uric acid were normal The latter was slightly increased The phenolsulphonephthalein excretion was diminished

3 **Cutaneous Reaction from Proteins in Eczema**—Of forty-three patients without eczema examined by Blackfan, only one showed any evidence of susceptibility to protein by cutaneous and intracutaneous tests Of twenty-seven patients with eczema, twenty-two gave evidence of susceptibility to proteins Egg white, cow's milk and woman's milk were the substances that most frequently caused a reaction If there was a reaction from one protein there usually was a reaction from several Blackfan found that the intracutaneous test is more delicate than the cutaneous but gives results that are more difficult to interpret The removal of some or all of the animal proteins from the food brings about great improvement in some cases of eczema in older children and adults With infants it is not successful, first, because it is impossible to feed an infant for a long time on a diet that contains no animal protein, without the risk of seriously affecting his nutrition, and second, because there is a strong tendency for the eczema to return, even though a protein-poor diet produces early improvement, and even though the protein-poor diet is continued

5 **Skin Manifestations with Streptococcus Infection**—Schwartz cites the case of a child who during an attack of bronchopneumonia, developed a generalized streptococcic infection This was exhibited clinically by the almost simultaneous appearance of a purulent arthritis, erythema nodosum and erysipelas A streptococcus was cultivated from the blood from a joint effusion, and from an excised nodule A suspension of the organism from these three sources was injected intravenously into three rabbits Those receiving the bacterial growth obtained from the excised node and from the joint effusion died within forty-eight hours from septicemia The rabbit which received the streptococcus isolated from the patient's blood was killed on the fifth day after injection The right ankle joint was swollen and contained purulent fluid Cultures from this joint gave a streptococcus

6 **Myelogenous Leukemia in Infant**—Besides the extreme youth of Knox's patient (9 months), the rapid course of the disease, less than three weeks, is noteworthy There was no enlargement of the lymphatic glands or of the spleen and no evidence of hemorrhage or of necrosis of the mucous membranes The symptoms apparently were referable to the gastro-intestinal tract The great number of leukocytes in the circulating blood, 200,000 per c mm was too many to be accounted for by a possible focus of infection and directed attention to a further study of the blood The differential count of the leukocytes showed the presence of a large number of myelocytes from the bone marrow and suggested the diagnosis of acute myelogenous leukemia

American Journal of Obstetrics and Diseases of Women and Children, York, Pa

May LXXIII No 5 pp 769 996

7 *Syphilis in Its Relation to Obstetrics E P Davis Philadelphia
8 *Syphilis in Relation to Some Social Problems S Pollitzer New York
9 Syphilis of Internal Genital Organs in Female G Gellhorn and H Ehrenfest St Louis

7, 8 and 9—Abstracted in THE JOURNAL, June 3, p 1817

American Journal of Physiology, Baltimore

June XL No 4 pp 503 612

10 *Effect of Ether Anesthesia on Electric Activity of Nerve A Forbes R McIntosh and W Sefton, Boston
11 *Method for Maintaining an Artificial Circulation Through Tibia of Dog, With Demonstration of Vasomotor Control of Marrow Vessels C K Drinker and K R Drinker Baltimore
12 *Blood Pressure in Hemorrhage and Its Restoration A W Downs Philadelphia
13 Structure of Fibrin Gel and Theories of Gel Formation W H Howell Baltimore
14 Tension of Carbon Dioxid and Percentage Saturation of Hemoglobin in Venous Blood at Rest and at Work W M Boothby and I Sandiford Boston
15 Determination of Character and Quantity of Respiratory Change of Arterial Pressure in Man by Means of Korotkoff Sounds I L B Foley, R G Coblentz and C D Snyder, Baltimore
16 Conduction of Painful Afferent Impulses in Spinal Nerves S W Ranson and P R Billingsley, Chicago
17 *Differences in Rhythmicity and Tone in Different Parts of Wall of Stomach W C Alvarez, San Francisco

10 **Effect of Ether Anesthesia on Activity of Nerve**—In their experimental work the authors found that even when etherization in the cat is pushed to the point of abolishing respiration and causing death, the nerve trunk remains functionally active and exhibits what appears to be essentially normal action currents With direct application of ether vapor to the isolated nerve muscle preparation, the action current in nerve regularly persists at least as long as contraction in the muscle, and in almost every instance longer The evidence, so far as it goes, supports the view that nerve impulse and electric disturbance are inseparable

11 **Nerve Supply of Bone Marrow**—The existence of vasomotor nerves to the marrow is demonstrated by the Drinkers These nerves respond on electric stimulation and on injection of epinephrin by causing vasoconstriction

12 **Blood Pressure in Hemorrhage**—Downs says gratifying results may be hoped for from the intravenous administration of normal salt solution When the blood pressure has reached the level of shock, 30 to 50 mm restoration of blood pressure and maintenance of the vital functions of the organism are a possibility but cannot be expected with any certainty In general it is stated that in hemorrhage injection of amounts of saline solution in excess of the amount of blood lost will give the best results, in severe cases the use of large amounts of normal salt solution, 50 to 100 c c per kilogram of body weight, is most likely to be attended by a successful outcome

17 **Rhythmicity and Tone in Musculature of Stomach**—Alvarez suggests that the gastro-intestinal tube may originally have been constructed so that the rhythmicity of any one segment varied inversely as the distance from the pharynx The rate of contraction of the stomach muscle varies inversely as the distance from the cardia The tone seems to be higher on the lesser than on the greater curvature

American Journal of Roentgenology, New York

May III No 5 pp 245 292

18 Respiratory Movements of Heart and Diaphragm G W Holmes Boston
19 Negative and Positive Roentgen Diagnosis of Gallstones J T Case Battle Creek Mich
20 *Roentgenologic Diagnosis of Duodenal Ulcer R D Carman Rochester Minn
21 Collargol Injection of Uterus and Tubes C Gottlieb New York
22 Treatment of Carbuncles by Roentgen Ray K Dunham Cincinnati
23 New Timer for Roentgentherapy R H Stevens Detroit

20 Abstracted in THE JOURNAL, Nov 13, 1915, p 1752

Annals of Ophthalmology, St Louis

April XXV No 2 pp 219-4 4

24 Optic Atrophy—Observations on Series of Cases of Unusual Interest I Krauss and S H Brown Philadelphia
25 Internal Secretory System in Ophthalmology With Special Reference to Goiter R S Lamb Washington D C
26 Perimetric Studies of Normal and Pathologic Blind Spot of Mariotte L C Peter Philadelphia
27 Massive Subconjunctival Injections of Cyanid of Mercury in Dangerously Injured or Infected Eyes E L Jones Cumberland Md
28 Fracture of Descemet's Membrane S Walker Jr, Chicago

29 Eye Records Designed Especially for Office Use F R Spencer, *Boulder, Colo*
30 Hole in Disk J H Claiborne, New York

Annals of Surgery, Philadelphia

June, LXIII, No 6, pp 641 777

31 Treatment of Fractures by Methods of Suspension and Extension J M Flint, New Haven, Conn
32 *Foreign Bodies in* Respiratory Tract, Report of Cases N W Green and L T LeWald, New York
33 *Tuberculosis of Breast, Report of Ten Cases L Durante and W C MacCarty, Rochester, Minn
34 Dental *Plate* in Esophagus G D Gregor, Watertown, N Y
35 Aperiosteal Stump and Its Care H H M Lyle, New York
36 Method *of* Facilitating Infiltration Anesthesia W Bartlett, St Louis
37 Calcareous Degeneration of Prostate Gland, Report of Case G S Peterkin, Seattle
38 Technic of Suprapubic Cystostomy *in Badly Infected Cases* H Williams, London
39 *Shirring Round Ligaments J W Long, Greensboro, N C
40 Urethroplasty at Base of Glans Penis Report of Case C W *Shropshire and* C Watterston, Birmingham, Ala
41 Pathologic Diagnosis of Diseases of Appendix Based *on* Study of One Thousand and Five Hundred Specimens E Moschcowitz, New York
42 Treatment of Retrocecal Appendix H A Shaw, Seattle
43 High Intestinal Stasis J E Sweet, *M M Peet and B M* Hendrix, Philadelphia
44 *Experimental Colonic Stasis C H Frazier and M M Peet, Philadelphia
45 Jejunal Ulcer, *Following Gastro* Enterostomy for Duodenal Ulcer, with Complete Closure of Gastric End of Stoma N Ginsburg, Philadelphia

33 **Tuberculosis of Breast**—In the ten cases observed by Durante and MacCarty there were three in which no primary focus was clinically demonstrable, there were three associated with tuberculosis of the lungs and three cases associated with no other clinical tuberculous lesion other than tuberculosis of the axillary lymphatic glands, and one which was associated with a pleurocostal lesion Only one of the ten patients was a male The ages of the patients varied from 22 to 52 The left breast was affected six times, the right four times The nipple was retracted in only two cases Only one patient complained of severe pain All but one, the man, had some pain In only one case was the skin ulcerated, in two others it was slightly inflamed

39 **Shirring Round Ligaments**—The operation termed by Long "shirring the round ligaments," is applicable only in those cases in which it is expedient to open the abdomen The first step is to seize the round ligament about midway with forceps A round needle, armed with linen or silk, is thrust through the ligament close to the pelvic brim, just at its exit from the internal inguinal ring The needle is again put through the ligament about a quarter of an inch farther toward the fundus This is repeated again and again, until sufficient length of the ligament has been sutured to insure the proper degree of shortening The last puncture of the needle is usually made through that portion of the ligament which is traumatized by the bite of the forceps By pulling lightly on the ends of the suture the ligament begins at once to "shirr," as a dressmaker would say Shirring the ligament necessarily shortens it

44 **Experimental Colonic Stasis**—The results of the experiments recorded by Frazier and Peet would seem to indicate that mere stagnation of feces in the colon of the dog, when on a normal mixed diet, does not lead to the formation of toxic substances of note, at least in the presence of the normal flora of the canine colon The fact that these dogs remained in perfect health and gained in weight would indicate that simple colonic stasis in the dog is harmless and suggests to the authors that the dire effects attributed to colonic stasis in man were, in part at least, due to *some other* cause than the absorption of the products usually *formed* in simple fecal stagnation

Archives of Diagnosis, New York

April, IX, No 2, pp 91 190

46 *Indications* for Operative Interference in Duodenal Ulcer J B Deaver, Philadelphia
47 Value of Deep Percussion in Diagnosis of Subacute Intra Abdominal Disease H Neuhof, New York
48 Etiology *and* Diagnosis of Infective Diseases of Biliary Ducts G A Friedman, New York

49 Bands and Adhesions *in Cecal Region* *H E* Stein, New York
50 Lane's Kink and Band H E Stein, New York
51 Prognosis of Pulmonary Edema T F Reilly, New York
52 Chronic Bronchitis, Emphysema and Asthma J Epstein, New York
53 Diagnostic Errors in Senile Cases I L Nascher, New York
54 Symptom in Extra Uterine Pregnancy H J Lehnhoff, Lincoln, Neb
55 *Differential Diagnosis of Diarrheas* in Bottle Fed Infants R H Dennett, New York

Boston Medical and Surgical Journal

June 8, CLXXIV, No 23, pp 815 856

56 Cholecystitis, Changes Produced by Removal of *Gallbladder* E S Judd, Rochester, Minn
57 Nephropexy Report of Cases R H Gilpatrick, Boston
58 Acute *Perforation of Ulcers of* Stomach and Duodenum, Report of Case M T Field, Salem
59 Postoperative Treatment H G Giddings, Boston
60 Streptococcal Infection Simulating Diphtheria D M Lewis, New Haven, Conn
61 Interesting Contact Case of *Diphtheria* J A Ceconi, Boston

June 15, No 24, pp 857 890

62 Respiratory Exchange, with Description of *Respiration Apparatus* for Clinical Use (To be continued) F C Benedict and E H Tompkins, Boston
63 *Studies of* Basal Metabolism in Disease and Their Importance in Clinical Medicine J H *Means, Boston*
64 Physician and Prevention of Industrial Accidents H J Cronin, Cambridge
65 Two Cases of Syphilis of Lung A Post, Boston

California State Journal of Medicine, San Francisco

May XIV, No 5, pp 169 210

66 *Adequate Institutional Care of Tubercular* P H Pierson, San Francisco
67 Course of Fresh Syphilis as Treated by Newer Remedies V G Vecki, San Francisco
68 *Fresh Syphilis and Newer Remedies* E D Chipman, San Francisco
69 Modern Treatment of Syphilis H E Alderson, San Francisco
70 Treatment of Syphilis in *Primary* Stage D W Montgomery, *San Francisco*
71 Present Status of Salvarsan Treatment H Morrow, San Francisco
72 Inconspicuous, Every Day Forms of Thyroid Insufficiency H R Harrower, Los Angeles
73 Oral Hygiene *from* Educational and Economic Viewpoint G S Millberry, San Francisco
74 Preoperative and Postoperative Care O McNeile, Los Angeles
75 National Quarantine and Its Function A C Reed, San Francisco
76 Why Corrective Lenses Often Fail to Give Relief to Headaches Due to Eye Strain R O'Conner, Oakland
77 Plasmodium Malaria (Quartan) Type New to California Report of Two Cases J C Geiger and F L Kelly, Berkeley
78 Slow Poisoning by "Christian Science" R B Dempsey, Vallejo
79 Rubeola W W Behlow, San Francisco

June, No 6, pp 211 258

80 Conservation of Vision G H Kress, Los Angeles
81 *Human Cases of Rabies in California and Their Treatment J C Geiger, Berkeley
82 Conservative Treatment of Fractures of Long Bones and of Wounds Complicating Them (To be concluded) J T Watkins, San Francisco
83 Large Cysts in Bladder, Report of Cases H Meyer, San Francisco
84 Bacteriology of Nasal Sinus Diseases J J Kyle, Los Angeles
85 Twenty Seven Transfusions at St Luke's Hospital F W Birtch, San Francisco
86 *Some Neurologic Conditions in Children* H W Wright, San Francisco

81 **Rabies Epidemic in California**—Of the thirty-three cases of rabies analyzed by Geiger, nine were having administered the Pasteur treatment or had completed the regular course Of these, three came down with definite symptoms on the seventeenth day of treatment and one on the nineteenth day Of the remaining, two showed *symptoms* in four days, two fifteen days, and one three weeks after the completion of the full course of treatment Twelve of the patients were bitten in the face and two were attributed to the inoculation *of the virus into scratches and wounds* with the saliva of the animal doing the biting One patient was bitten through the tongue The balance of the bites were on numerous parts of the body The shortest time of death after being bitten was sixteen days This occurred in two instances, both patients being bitten on the face Of the remaining cases, death in six occurred three weeks after being bitten, in two four weeks, in seven five weeks in two six weeks, in one seven

weeks, in three eight weeks, in two nine weeks and in one eleven weeks The duration of illness in the majority of instances was three days the longest being ten In every instance but one, and that by a cat the bites were caused by dogs In only six of the cases were the wounds cauterized at all five of these being with nitric acid In fourteen instances the diagnosis of rabies was proved by microscopic examination and animal inoculation in three by microscopic examination alone, and in three by animal inoculation alone and in fourteen by symptoms Every sedative used failed to control the nervous condition in any way whatever In four of the cases, quinin was used during the course of the disease without any effect

Canadian Medical Association Journal, Toronto

May XI No 5 pp 85 480

87 Hospital Diets and Their Relation to Treatment of Certain Diseases E C McCullough Boston
88 Medical Beliefs and Superstitions of Keltic Race J Cameron Halifax
89 Prostatic Hypertrophy and Treatment by Suprapubic Prostatectomy C L Fuller Toronto
90 Results of Year's Work in Treatment of Acute Appendicitis E R Secord and L H Coates Brantford
91 Amebic Dysentery Amebic Abscess of Liver A H Gordon Montreal
92 Double Facial Paralysis G S Mundie Montreal

Journal of Cutaneous Diseases, Boston

June XXXII No 6 pp 415 488

93 How Can We Improve Our Hospital Service? C J White Boston
94 *Two Cases of Idiopathic Hemorrhagic Sarcoma (Kaposi) T C Gilchrist and L W Ketron Baltimore
95 *Psoriasis as Sequel to Acute Inflammations of Tonsils Report of Case J M Winfield, Brooklyn
96 Monilethrix Report of Six Cases (To be continued) G M MacKee and I Rosen New York

94 **Idiopathic Hemorrhagic Sarcoma**—Three different methods of treatment were used by Gilchrist and Ketron in one of their cases and with excellent results The patient was given daily intramuscular injections of ¾ grain of the cacodylate of sodium, and after ten days this was gradually increased to 2 grains The hands, legs and feet were exposed daily to mild, soft Roentgen rays and radium (10 mg old measure) was applied for twenty-four hours to one nodule after another, on the arms and legs, until about 90 lesions were treated After six weeks, the patient was remarkably better The edema of the hands and feet had almost completely disappeared after three weeks treatment, and the hands could be closed In cases in which the Roentgen rays were applied the induration had disappeared but the pigmentation remained The radium applications gave decidedly the best results causing the induration and pigmentation both to entirely disappear leaving the skin practically normal After six weeks treatment one could say, that his skin lesions were 75 per cent better The second patient was treated with filtered Roentgen rays and the lesions entirely disappeared and there has been no recurrence within the last ten months The disease was found to be not auto-inoculable

The authors' studies show that the lesions begin in the skin as angiomas due to a proliferation and dilatation of the blood capillaries which are very frail at first and liable to rupture This is followed by a proliferation of the interstitial connective tissue and endothelium, which gradually obliterates the blood spaces, forming solid tumors In the early stages these resemble in some areas young connective tissue in other areas sarcomas As the lesions grow older they assume a more fibrous aspect and may undergo involution Coexistent with the formation of the tumors there is a sclerosis of the small arteries supplying them, causing a gradual decrease in the amount of blood To this is due, most likely their later evolution as well as involution From this beginning, then as a cutaneous angioma or later angiosarcoma the disease spreads by metastases which first appear in the neighborhood of the primary lesion and later become widespread both in the skin and internal organs leading in many cases to death

95 **Psoriasis, Sequel to Inflammations of Tonsils**—Six cases all following some inflammation of the tonsils are cited by Winfield In one case the skin disease followed enucleation of the tonsils Examination of smears taken from the throat failed to show any reason for the high temperature In another case the skin disease was the sequel of a streptococcic sore throat Psoriasis followed an attack of follicular tonsillitis in four cases No etiologic light was thrown on the cause of the skin disease by bacteriologic examinations of the follicular contents and other secretions from the throat

Journal-Lancet, Minneapolis

June 1 XXXVI No 11 pp 309 339

97 *Medical Treatment of Diabetics Preparatory to Surgical Treatment D M Berkman Rochester
98 Preventable Field Relation of Practicing Physician, Local and State Health Officer I J Murphy S Paul
99 *Early Diagnosis of Intussusception in Children Under Three Years of Age A W Abbott Minneapolis
100 *Raynaud's Disease Some Unusual Types G D Head Minneapolis

97 **Medical Treatment of Diabetics**—The material for Berkman's report was drawn from the histories of the patients operated on in the Mayo Clinic during the past year in whose urine the presence of sugar was positively demonstrated The purpose was to establish a method of determining the operability of such patients and reasonably rapid and safe course of treatment preparatory to and after operation The first object was to render the patient's urine sugar free as soon as possible and for this no better procedure was found than that advocated by Allen The use of sodium bicarbonate has become routine, and, Berkman and his associates feel that it has contributed in no small degree to the recovery of their patients It is used in dram doses by mouth six to eight times daily three or four days before the operation This treatment is resumed as soon as possible after operation Should the surgeon find it necessary to give rectal salines, soda is administered in this way also They have on two or three occasions found it advisable to give it by intravenous injections in 5 per cent solution During the postoperative observation the urine is watched carefully, although keeping it free from sugar is more difficult, and is not as important as before operation Twenty-six glycosuric patients came to operation Two patients died, a mortality of 7 7 per cent Eight patients were passing less than 10 gm of sugar in twenty-four hours on an ordinary diet, and, other conditions being satisfactory they required very little preoperative treatment, and that largely for the purposes of observation

99 Abstracted in The Journal, January 22, p 304

100 **Raynaud's Disease**—The cases cited by Head vary from the rule in their manifestations In one case the fingers became white as if frozen (dead fingers) In another case the disease was associated with attacks of pain in the abdomen, accompanied by vomiting and diarrhea and associated with a blue cyanotic appearance of her hands and feet Urine examination revealed a specific gravity of 1 020 a large amount of albumin and a few hyalin and granular casts A third patient complained of a feeling of pressure over the lower chest and upper abdomen which she described as "growing greater and smaller like a bubble expanding and contracting She had no pain with these attacks The fingers became marble-white and felt numb The attack lasted about five minutes A fourth patient had angiospasm of such a high degree as to produce, not only a series of puzzling abdominal symptoms, but also fainting attacks, polyuria girdle pain, etc.

Laryngoscope, St Louis

May XXVI No 5 pp 869 9 6

101 Articulorespiratory Disturbances of Speech O Glogau New York
102 Tuberculosis of Larynx with Special Reference to Use of Tuberculin H Hastings Los Angeles
10 Malignant Hypernephroma of Ethmoidal Region H Arrowsmith Brooklyn
104 Control of Hemorrhage in More Extensive Operations on Nose and Jaws L W Dean Iowa City Iowa
105 Case of Von Mikulicz Disease S L Olsho Philadelphia
106 Improved Killian Speculum for Operation on Antrum of Highmore J J Sullivan Jr Scranton Pa
107 New Instruments J J Sullivan, Jr Scranton Pa

Medical Record, New York

June 10, LXXXIX, No 24, pp 1029 1070

108 Roentgenographic Control of Pneumothorax Treatment of Pulmonary Tuberculosis I S Hirsch, New York
109 Gastrohydrorrhea in Cirrhosis of Liver Accompanied by Pyloric Stenosis, Report of Cases M Einhorn, New York
110 Case of Osteochondrofibroma or Osteitis Fibrosa, Report of Case V P Gibney, New York
111 Case of Complete Congenital Atresia of Ileum R H Fowler, Brooklyn
112 Case of Carcinoma of Esophagus Perforating into Right Bronchus J Guttman and I W Held, New York
113 Case of Congenital Elevation of Scapula S Cohen, New York
114 Is Myopathy Related to Disorders of Internal Secretions? G P McCouch and S D W Ludlum, Philadelphia
115 *New *Theory of Function* of Lymphocytes D Meredith, Wichita Falls, Texas

115 New Theory of Function of Lymphocytes—That there are both male and female cells within the body is an original theory with Meredith He believes that the small lymphocyte is the male cell For instance Through the enzymes liberated by the dissolution of a dead cell, leukocytes and lymphocytes are attracted, the one to remove the dead tissue and the other to repair the damage These same enzymes acting as a foreign body stimulate the adjoining cell, which begins to swell and get ready, as it were, for the male element, just as the ovum does for the spermatozoa, and when it becomes impregnated goes through the caryokinetic change, with a division of the cell into daughter cell, to take the place of the dead cell Meredith does not think that it is necessary for a lymphocyte to come in actual contact with the cell that it impregnates, but that it does excrete from it nuclear material, when irritated, an enzymic body, which, when it comes in contact with cells that are beginning to proliferate impregnates these cells, bringing about a true mitosis or indirect division of the cell thus impregnated

Michigan State Medical Society Journal, Grand Rapids

June XV, No 6, pp 273 326

116 Use of Chloroform as Obstetric Analgesic W H Morley, Detroit
117 Ether in Obstetrics F S Kellogg, Boston
118 Scopolamin Morphin in Labor Study of Twenty One Cases C E Boys Kalamazoo
119 Nitrous Oxid Oxygen Analgesia in Obstetrics C H Davis, *Chicago*
120 *Practical Application of* Schick Reaction G Sewell, Detroit
121 Symptoms and Early Diagnosis of Cancer of Large Intestine L J *Hirschman, Detroit*
122 Relationship of Heredity and Environment on Psychosis I L Polozker, Detroit
123 Case of Otogenic Pharyngeal Abscess with Review of Literature C B Fulkerson, Kalamazoo
124 Osteoma of Frontal Sinus, Report of Case C C Probert, West Branch
125 Histopathologic Studies of Multiple Sclerosis T Klingmann, Ann Arbor
126 Reports on Use of Dakin's Solution (Hypochlorous Acid) C B G de Nancrede and R W Kraft, Ann Arbor
127 Case of Pseudohypertrophic Muscular Dystrophy C D Camp, Ann Arbor
128 Case of Leukemia without Hyperleukocytosis Q O Gilbert, Ann Arbor

Missouri State Medical Association Journal, St Louis

June, XIII No 6 pp 251 304

129 *Miners' Consumption in Southwestern Missouri, Report of Case A J Lanza, Washington, D C
130 Treatment of Epithelioma by Roentgen Ray J L McDermott, Kansas City
131 What St Louis Medical Supply Depot of U S Army Is and What It Does T U Raymond, St Louis
132 Medical Preparedness W A Wickline, Jefferson Barracks
133 Experiences at Military Training Camp R E Wobus, St Louis
134 Choice of Operation in Various Classes of Cases of Retrodisplacement of Uterus H S Crossen, St Louis
135 Present Status of Argyll Robertson Pupil M W Jacobs, St Louis
136 Will Profession Have to Be Reeducated on Subject of Appendicitis? J Y Brown, St Louis
137 Fractures of Wrist M B Hendrix, Caruthersville

129 Miners' Consumption—A series of physical examinations was made by Lanza embracing 720 miners Definite signs of lung injury were found in 433, or 60 per cent, 103 of these latter also had tubercle bacilli in their sputum Throughout this series the most prominent symptom was dyspnea on exertion The dyspnea was gradual, almost insidious, in its onset, and there was evident a connection between its severity and the length of time the miner had worked in sheet ground The dyspnea was usually accompanied by cough and expectoration, but even dyspnea severe enough to incapacitate for work was seen without these other symptoms being present The majority of the patients looked well, and aside from the dyspnea felt well In many cases the dyspnea was severe, often urgent, and it was remarkable how men in this state continued to work underground Pain in the chest, diminished expansion, and loss of weight were constant symptoms throughout Loss of weight, while frequently present, was not marked until the third stage was reached Cough antedated dyspnea when, as was sometimes the case, the latter was ushered in by a bronchitis, but more often the cough did not appear until after the dyspnea Night sweats were not frequent Hemorrhages were comparatively frequent, 3 3 per cent of those in the first stage, 10 per cent of those in the second stage, and 25 per cent of those in the third stage, both tuberculous and nontuberculous, having had one or more The prognosis in miners' tuberculosis after the first stage is bad Lanza pleads for the accurate reporting of deaths from miners' tuberculosis because efforts to overcome an important industrial disease of this sort depend largely on reliable death statistics

New Mexico Medical Journal, Las Cruces

May, XVI, No 2 pp 27 69

138 Local Anesthesia in Major Surgery O S Fowler, Denver
139 Arterial Hypertension T C Sexton, Las Cruces
140 Medical Nomenclature W W Dill, Albuquerque
141 Typhus H M Cornell, Las Cruces

New York Medical Journal

June 3, CIII, No 23 pp 1057 1104

142 Definite Management of Pneumonia (To be continued) S Solis Cohen, *Philadelphia*
143 Case of Hour Glass Gallbladder R S Fowler, New York
144 Lye Stricture of Esophagus H Arrowsmith, New York
145 Diagnosis of Ureteral Calculus V C Pedersen, New York
146 Sarcoma of Tibia with Metastasis to Chest E P Tompkins, Roanoke, Va
147 Cases of Presenile Gangrene—Thrombo Angeitis Obliterans C Goodman and E P Bernstein, New York
148 Device for Protection Against Tubercle Bacillus R A Keilty, Philadelphia
149 Unusual Complications in Case of Glaucoma from Atropin T Y Sutphen, Newark, N J
150 Pellagra, Clinical Report on State of New York J M Winfield, New York
151 Curatelle and Modern Psychiatry G W Jacoby, New York

June 10 No 24, pp 1105 1152

152 Therapeutic Resources of Saratoga Springs S Baruch, New York
153 Surgery of Heart W W Babcock, Philadelphia
154 Delayed Gastric Digestion M E Rehfuss, Philadelphia
155 Definite Management of Pneumonia (Concluded) S Solis Cohen, Philadelphia
156 Case of External Dislocation of Knee, Report of Case R H Fowler, New York
157 Epidemic Pneumonia in Tropics J H Egbert, New York
158 Apparatus for Intravenous Salvarsan Injection L R Kaufman, New York

June 17, No 25, pp 1153 1208

159 Some of Larger Problems of Medical Profession R Blue, Washington, D C
160 Failures in Diagnosis W S Gordon, Richmond, Va
161 Focal Sepsis J Daland, Philadelphia
162 Roentgen Ray Diagnosis of Surgical Complications Within *Chest* G E Pfahler, Philadelphia
163 Corroborative Diagnosis of Mastoiditis by Means of Roentgen Ray H Hays, New York
164 Meningitis, Report of Seven Cases R C Rosenberger and D J Bentley, Jr, Philadelphia
165 Typhus E K Tullidge, Philadelphia
166 Camp Sanitation P W Huntington, New York
167 Radium in Gastric Carcinoma C E Field, New York
168 Leukocyte Count of Appendicitis J E Robinson, Temple Texas
169 Cardiac Dilatation as Complication of Apical Pulmonary Tuberculosis M Grossman, New York

New York State Journal of Medicine

May, XVI No 5, pp 223 278

170 Will Private Practitioner Determine Future of Public Health Work? H Emerson, New York
171 Treatment of General Infections by Serums and Vaccines A MacFarlane, Albany

172 *Materials Which Are Available for Thyroid Feeding and Their Therapeutic Uses J Rogers New York
173 Importance of Early Recognition of Arteriosclerosis L I Bishop New York
174 Syphilis as Etiologic Factor in Epilepsy W T Shanahan, Sonyea
175 Syphilis of Stomach R B Morris, Olean
176 Cancer from Medical Standpoint I D Bulkley New York
177 Glenard's Disease Report of Cases B C Loveland Syracuse
178 Accidents and Injuries of Eyes—Their Prevention and Treatment F P Lewis Buffalo
179 End Results in Cases Operated for Salpingitis E M Stanton, Schenectady
180 Two Cases of Acute Intestinal Occlusion Following Parturition I L Greeley Jamestown

172 **Materials Available for Thyroid Feeding**—Many cases which present thyroid enlargement and other symptoms which cannot definitely be classified as those of either hypothyroidism or hyperthyroidism may fail to be relieved by any kind of thyroid medication but may have their disturbance improved or cured by feeding with material derived from some other organ The nucleoproteins globulins and coagulable proteins obtained respectively from the suprarenal, the pancreas, the thyroid, the pituitary and the ovary are sometimes efficacious The dosage of these proteins is from ½ to 1 grain given by mouth three or four times daily Rogers cites a number of very interesting cases One was a case of typical myxedema illustrating hyperthyroidism after commercial thyroid feeding Relief was obtained only by feeding with thyroid proteins In another case of typical myxedema relief was found by feeding with the thyroid residue" Thyroid residue proved quite valuable in a number of cases of postoperative hyperthyroidism One case of persistent menorrhagia with mild hypothyroidism was relieved by feeding thyroid residue'

174 **Syphilis in Epilepsy**—In a series of 886 patients at the Sonyea Colony on whom a Wassermann test was applied to the blood serum by Shanahan, but twenty-two, or 2 48 per cent gave a positive reaction Included in the number on whom tests were applied were all of those patients at the colony whose history or physical condition was at all suspicious as regards the existence of syphilis The natural inference to be drawn from tests applied at the colony and elsewhere is, that syphilis plays a less active role as a causative factor in the occurrence of epilepsy than has heretofore been thought

Pennsylvania Medical Journal, Athens

May XIX No 8 pp 581 646

181 Importance of Prevention of Industrial Accidents and Occupational Diseases F D Patterson Harrisburg
182 Vaccine Treatment of Chronic Suppurative Otitis Media G M Coates and M S Ersner Philadelphia
183 Operative Treatment of Strabismus H F Hansell Philadelphia
184 Nonoperative Treatment of Strabismus W Reber Philadelphia
185 Etiology and Treatment of Trachoma C S Rebuck Harrisburg
186 Factors Influencing Present Mortality of Peritonitis D B Pfeiffer Philadelphia
187 Treatment of Undescended Testicle J H Gibbon Philadelphia
188 Department of Health Laboratory and What It Has Done for Physicians of State J B Rucker Jr Philadelphia
189 Relationship Between Division of Medical Inspection and Physician A A Cairns Philadelphia
190 Case of Attached Twins J K Kiser, Kittanning

South Carolina Medical Association Journal, Greenville

May XII No 5 pp 127 156

191 Psychiatric Aspects of Pellagra W C Sandy Columbia
192 One Year's Experience with Model Vital Statistics Law in South Carolina J A Hayne Columbia
193 Digestive Disorders in Infants M Ladd Boston

Southern Medical Journal, Birmingham, Ala

June IX No 6 pp 485 576

194 Etiology and Treatment of Arthritis E D Holland Hot Springs Ark
195 *Influence of Potassium Iodid on Luetin Test R. Lyons New Orleans
196 Focal Infections Results of Overcoming Same. W C Mayes and C F Wilson Memphis Texas
197 *Psychoses Associated with Pellagra. W C Sandy Columbia S C
198 Relation of Pellagra to Nutrition M O'Malley Washington D C
199 Better Babie Movement B L Arms Galveston Texas
200 Use and Abuse of Public Health Laboratory C R Stingily, Jackson Miss
201 *Cancer of Mouth and Tongue with Special Reference to Metastases in Neck J S Horsley Richmond Va
202 Treatment of Suppurative Appendicitis S Leigh, Norfolk Va
203 Differential Diagnosis of Diseases in Right Upper Quadrant of Abdomen A C Scott Temple Texas
204 Peritonitis and Its Rational Treatment U Maes New Orleans
205 Preparatory Treatment for Transportation of Injured B Saunders Fort Worth Texas
206 Secondary Tonsillar Hemorrhage H B Decherd Dallas Texas
207 Tonsil Factor in Bad Breath W R Thompson, Fort Worth Texas

195 Abstracted in THE JOURNAL, Dec 11, 1915, p 2119

197 **Psychoses Associated with Pellagra**—One of the most common psychoses associated with pellagra, according to Sandy occurring twenty-eight times in 100 cases, is the infective exhaustive psychosis Manic depressive insanity occurred sixteen times There were four cases of symptomatic depressions, fourteen of dementia praecox Fifteen cases of senile psychosis or senile dementia, three epileptic imbeciles or idiots, three cases of constitutional inferiority with episodes of some kind and three were not insane

201 **Cancer of Mouth and Tongue**—Summarizing the results of the eight patients treated by him, Horsley says that all were advanced cases and seven were late cases with either a recurrence from a previous operation or incision or marked involvement of the glands of the neck Three had both recurrence and glandular involvement Four of the eight cases are living today (November, 1915) Of these, three are in good health and without any signs of recurrence for periods of thirteen months, three years, and three years and eleven months respectively The remaining patient who is living had a recurrence for which he was operated on four weeks ago He is now doing well and has some chance for permanent recovery Of the four patients who are dead, two died of recurrence, one from sudden stoppage of the heart an hour after an operation for plastic closure of the defect in the mouth This patient died with a recurrence but not because of it Another patient died of an indefinite lung lesion Of the four deaths and one patient with a recent recurrence three had had an incision for diagnostic purposes with operation done several days later and two had incomplete operations followed by rapid recurrence In none of the three patients now living and who have been free from recurrence for from over one year to nearly four years was a preliminary incision made, but in the five remaining cases four of whom are dead and one who has had a recent recurrence a preliminary incision or incomplete operation was done in each instance from several days to several weeks before the radical operation was undertaken

Vermont Medicine, Rutland

May I No 5 pp 129 156

208 Clinical Notes on Alcoholic Multiple Neuritis C H Dean Salisbury
209 Neisserian Infection Complicating Pregnancy O N Eastman Burlington

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FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Journal of Surgery, London

April III No 12 pp 585 758

1 Analysis of Sixty Cases of Gunshot Fractures of Femur E W H Groves
2 Treatment of Fractures of Femur at Casualty Clearing Station A Bowlby
3 Gunshot Fractures of Femur E K Martin
4 Study of Symptoms and Complications of Gunshot Wounds of Solid Abdominal Viscera G H Makins
5 Gunshot Wounds of Solid Abdominal Viscera C Wallace
6 Seventy Five Cases of Gunshot Wounds of Chest. J L. Menzies
7 *Flapless Amputation M Fitzmaurice Kelly
8 Case of Trench Foot in Absence of Frost S G Luker
9 Traumatic Rupture of Common Bile Duct in Boy Six Years Old G E Waugh
10 Simple Goiter and Its Treatment F N G Starr
11 Some Surgical Uses of Celluloid Technic of Fracture Operations G S Thompson
12 *Gunshot Wounds of Cranium With Special Reference to Those of Brain. R. Whitaker

7 **Flapless Amputation**—The method which gives the best chance of life to the patient is that which leaves the nutrition of the stump unimpaired to the end, in which, in other words the nutrition is not cut off by the undermining of flaps, and now, after nearly two years experience, Fitzmaurice-Kelly considers gaseous gangrene as an absolute indication for a flapless amputation Other conditions for which he employs the method, though for different reasons, are certain cases of compound comminuted fractures and of multiple wounds The advantages claimed for this method are That it saves life, that it saves length of limb, that the risk of secondary hemorrhage is lessened, that it arrests the spread of infection, whereas in flap amputations sepsis often recurs in the flaps, and spreads up from their base, and that it is possible where no other method is possible As to the technic the skin and deep fascia are divided, usually in circular fashion, but sometimes more skin can be gained by making the incision oblique, after retraction has occurred the muscles are divided at the level of the retracted skin—not too quickly, so as to allow a retraction of the layers, then the bone is sawed flush with the muscle, vessels are secured and nerves carefully shortened The surface is slightly concave at first if the operation has been done properly, but soon becomes convex from further retraction This, however, once the face is fairly clean is overcome easily by extension Strips of strapping are laid up the limb to the joint above, fixed with circular bands, and then carried down to a large ring of malleable aluminium to which a weight extension is attached In the middle the stump is easily accessible for dressing In this way all that has been lost by retraction can be regained rapidly, and it is rarely necessary to do more than remove a length of bone with a Gigli's saw

12 **Gunshot Wounds of Cranium**—Whitaker claims that the brain and its coverings have a greater power of resistance to sepsis than they have been given credit for To this general statement there are two exceptions If the infection be (*a*) streptococcic, or (*b*) intraventricular, the resistance is low The brain and its coverings also have a very much greater power of recovery from an injury than the early signs and symptoms caused thereby would suggest The apparent hopelessness of a brain injury should not be allowed to influence an operator—working in suitable environment—in arriving at a decision whether to interfere or not While it is obviously desirable that every case of gunshot wound of the brain requiring operation should be thus treated at the earliest possible moment, yet Whitaker's experience has shown that if this operation be performed inadequately, or under unfavorable circumstances, the risk to the patient of introducing a new and more virulent infection is such a real one, that his interests may well be best served by those responsible for his transit to a base hospital, if they confine their attention to active disinfection and careful frequent dressing, and possibly the administration of antistreptococcic serum until his arrival there Of the cases that arrived at the general hospital without having been previously operated on, 3 per cent had streptococcic infection Of the cases that arrived having already been operated on 58 per cent had streptococcal infection

Assuming that the patient has arrived at the base hospital When in doubt, operate In performing the operation, it is better to err, if at all, on the drastic side rather than the conservative Prolonged hunting for fragments of bone, etc, known or thought to be lodged in the brain substance, is inadvisable The element of time is of great importance in these operations It is the type of infection rather than the extent of the injury itself which is the determining factor of the prognosis In a small proportion of cases, after the wound has healed and after a latent period of several weeks, there arises a fatal infection by the *Staphylococcus albus*, either in the form of septicemia or of a secondary infection of a hemocephalus It is desirable that all cases of head injury should be kept quiet with drugs for as long as may be necessary, and fed as much as possible from the earliest moment in order to obviate the extreme emaciation which is characteristic of the more severe cases The cases must be dressed [illegible] twelve hours and with the utmost care The recovery of an infected brain wound depends on the maintenance of the freest possible drainage

British Medical Journal, London

May 27, I, No 2891 pp 745 776

13 Louse Problem at Western Front (To be continued) A D Peacock
14 Soldier's Foot and Treatment of Common Deformities of Foot R Jones
15 *Case of Traumatic Arteriovenous Aneurysm of Subclavian Artery and Vein C Berkeley and V Bonney
16 *Case of Penetrating Wound of Heart P G Dixon and P McEwan
17 *White Gangrene, Report of Cases A J Hull
18 Simple and Inexpensive Methods for Fermentation Tests and for Obtaining Cultures of Anaerobes J M Beattie

15 ***Arteriovenous Aneurysm of Subclavian Artery and Vein***—A rifle bullet struck the authors' patient just outside the axillary border of the right scapula near its inferior angle, emerging just above the middle of the right clavicle The wound of entrance was healed and the wound of exit practically healed, but underlying it in the subclavian triangle was a pulsating swelling about the size of a double walnut There was a very marked thrill, which could be felt and heard even so far as the bend of the elbow The right arm was entirely paralyzed A diagnosis of arteriovenous aneurysm of the third part of the subclavian artery and vein and injury to the brachial plexus was made, and as the swelling in the neck was steadily enlarging and the patient was painfully conscious of the loud thrill, it was decided to operate The operation consisted of an excision of the sac and the second and third parts of the artery The sac lay between the third part of the subclavian artery and vein, and communicated with both The aperture into the vein was fortunately small, and was situated about the point where the external jugular joins it The sac wall was very thin Its front part was formed by the deep cervical fascia, behind and above it adhered to the brachial plexus, while the first rib and clavicle had limited it below Eight months after the operation no abnormal pulsation could be found in the neck, nor any pulsation at all in the arm, which was normal in warmth and color The arm, however, was still paralyzed, though there was some return of power in the muscles of the shoulder and the flexors of the forearm There was loss of sensation over that part of the hand supplied by the ulnar nerve

16 **Penetrating Wound of Heart**—In the case recorded by Dixon and McEwan the patient was wounded, while in the upright position by a rifle grenade There was a small wound one-half inch to the inner side and one-half inch above the left nipple His temperature rose to 102 F, pulse 130, respiration 45 He was semiconscious all the time he was in this hospital He knew his name, regiment, and home address, but kept on trying to get out of bed, and was often delirious He never complained of any pain either in the chest or arm, but suffered considerably from thirst The heart sounds were normal There were signs of fluid in both pleural cavities, more on the right than on the left side There was neither cough nor expectoration He lived fifty-nine and one half hours after receiving the injury, and having during that time been conveyed from the regiment to the field ambulance, and from that unit to the clearing station At the necropsy a small external wound, situated just above and internal to the left nipple, was traced transversely inward for about 2 inches through the subcutaneous tissue and chest muscle, its subsequent course was through the sternum, leaving the internal mammary artery intact, then through the edge of the left lung, the pericardium, the right ventricle and the pericardium, finally the missile was found imbedded in the right lung

17 **White Gangrene**—The condition described by Hull appears to be an acute streptococcal infection, and is, in appearance, not unlike phlegmasia alba dolens, but is attended by the local circumstances associated with gangrene and the general effects of an acute toxemia This form of gangrene has only been seen in the lower extremity The skin is glazed and white, moist, cold and pits on firm pressure A very firm edema is present, and the distal pulse

in the limb cannot be felt The glazed white appearance of the distended skin, instead of the usual redness, seems particularly characteristic Early in the condition the patient is extremely ill, with clammy, sweating face, and running pulse The condition is extremely fatal, and death occurs in about twelve hours The infection is so rapidly fatal that little change in the color of the limb has been noticed In those cases which have survived somewhat longer, it has been found that, during the last few hours, the limb has become mottled black and the discharge exceedingly foul No gas has been noticed in the discharge and no crackling has been detected in the tissues The appearance is somewhat suggestive of deep seated pus, owing to the tension of the skin, but, on making an incision into the limb, the wound merely oozes serum In the more severe and extensive forms the infection is so severe and the patient's condition so serious that no treatment appears practicable Amputation gives the only chance of recovery, and is successful when the infection is localized

Journal of Tropical Medicine and Hygiene, London

May 15 XIX No 10 pp 117 128

19 Epidemic Cerebrospinal Meningitis as Seen in Anglo Egyptian Sudan A J Chalmers and W R O Farrell

Lancet, London

May 27 I No 4839 pp 1069 1110

20 Typhus in Serbia R O Moon
21 Arrangements for Care of Cases of Nervous and Mental Shock Coming from Overseas W A Turner
22 *Congestion in Treatment of Cases of Epidemic Cerebrospinal Meningitis D Forbes and E Cohen
23 *Treatment of Gunshot Wounds by Packing With Salt Sacs A J Hull
24 Anatomic Position of Localized Foreign Bodies J Metcalfe and E. N Keys Wells
25 Simple Tertian Malaria in French Flanders A C Rankin
26 Warfare Neuroses of Throat and Ear J F O Malley
27 Cases of Head Abdominal and Joint Injuries H L Brown
28 Odor of Paint as Cause of Plumbism H H Moyle
29 Diabetes Insipidus Developing Suddenly, With Uterine Fibroids Hysterectomy J Oliver
30 Case of Acute Tetanus With Hematemesis V M Metivier
31 Notes on Camp Sanitation A White

22 **Treatment of Epidemic Cerebrospinal Meningitis** — The treatment advocated by Forbes and Cohen is said not to interfere with concurrent treatment Congestion of the cerebral vessels is brought about by raising the foot of the bed not on blocks, but on stools or lockers, so that the bed and the patient s body, no pillow being allowed, make an angle of from 14 to 23 with the floor The method is said to influence the course of the disease profoundly, five cases so treated are reported In mild cases in a few days a normal temperature and free movement of the head result and the recovery is uninterrupted In more severe cases the temperature rises and the patient more gradually recovers, the recovery being at first accompanied either or both by increased tension of cerebrospinal fluid and a greater migration of polymorphs If the foot of the bed has been raised too high there may be very severe headache and persistent vomiting due to a too great congestion and its results In such cases if the bed is lowered and the tension is relieved by puncture the patient gradually recovers

23 **Packing of Gunshot Wounds with Salt Sacs** — The solid salt sac used by Hull consists of a two-walled sac of suitable size made of bandage between the layers of which four layers of gauze are placed The interior of the sac is filled with salt and the tail of the bandage forms a drain These sacs are made in several sizes sterilized in an autoclave, and stored ready for use One or more of them are used to pack the wound the intervals between the sacs being filled with gauze A tube of perforated zinc or rubber may be passed into the depth of the wound in cases of large septic wounds Long slender sacs are made to fill bullet tracks Small sacs are made for draining tracks in the brain The free end of the sac is passed into a vessel containing saline solution and the wound then drains by capillary attraction A fine rubber tube may be run in along each sac and drip irrigation carried out if required The salt remains undissolved for several days and when the sacs are removed from a wound at the end of a week undissolved salt still remains Hull claims that a wound cavity filled with gauze and salt may be considered as effectively drained as if the cavity were inverted and the walls dressed as a surface wound Every portion of the surface area is drained by the osmotic action of the salt, and the capillary action of the gauze and bandage is continually removing the discharge and producing a continuous and automatic drainage and lavage of every portion of the interior of the wound

Sei-I-Kwai Medical Journal, Tokyo

May XXXV No 5 pp 23 28

32 Schlatter s Disease Report of Cases S Ikawa
33 Some Complications in Typhoid Y Takaki

Bulletin de l'Academie de Médecine, Paris

May 16 LXXV No 20 pp 583 606

34 Localized Tetanus Bazy
35 *Ultimate Outcome After Resection of Joints for War Wounds (Valeur fonctionnelle des membres apres resections des grandes articulations pour blessures de guerre — 1914 1915) Nove Josserand and Tuffier
36 Variability of Symptoms in Tardy Tetanus L Berard and A Lumiere
37 *Perivascular Neuritis After Contusion of Limb (Contusion profonde et massive du membre inferieur Intervention sur le sympathique perivasculaire) R Le Fort
38 Standardization of Catgut E Quenu and Others

35 **Functional Outcome of Resection of Joints** — This communication reviews the outcome after 1,132 resections of shoulder, elbow or wrist and 678 of the hip, knee or ankle Primary resections gave unsatisfactory results for the shoulder in 80 per cent and for the elbow in 70 per cent, while the proportion was only 32 per cent in the secondary resection cases The primary resections were made more hastily, without care to retain enough periosteum, or else the lesion was too destructive to permit function or repair Even at the worst the limb was saved and this in itself is ample ground for rejoicing Primary resection gave better results for the knee than the elbow while with secondary resection, the elbow fared better than the knee See also Paris Letter in THE JOURNAL June 17 p 2000

37 **Painful Myositis and Neuritis After Contusion** — The contusion occurred during the explosion of a bomb and the right leg swelled for two weeks but there were no erosions The muscles of the leg atrophied and two large bunches could be palpated, but the main symptom was the atrocious spontaneous pain without any definite location After six months of this martyrdom unmodified by the numerous measures applied, Le Fort decided to act on the sympathetic nerve Instead of obtaining access to it by way of the abdomen or the sciatic or femoral routes, he attacked it in the popliteal region stripping the popliteal artery over a stretch 6 cm long The artery was found abnormally contracted without perceptible pulsation Improvement set in within four or five days and has progressed constantly since The trouble in such cases involves vessel and nerve it may possibly be from infiltration with blood of the sheath of the vessel Denudation of the artery for a certain stretch combats this It proved effectual also in a case of an extreme edematous condition ot the hand following a wound of one finger

Journal de Médecine de Bordeaux

May LXXXVII No 7 pp 121 142

39 The War Nurse (De l utilisation de la femme comme infirmiere en temps de guerre Qualites et devoirs de l infirmiere) C Fromaget
40 Mechanism of Infection of Brain and Meningitis After Fracture of Skull (Enfoncement du temporal par coup de pied de cheval et fracture transversale de la base) L Rocher and Dardin Clavaud
41 Anomalies in the Muscles of the Axilla (Anomalies musculaires du creux axillaire) Princeteau and Jeanneney
42 Immobilization in Case of Extensive Wounds (Brancard gouttiere immobilisateur pour grands blessés) J J Matignon

Journal d'Urologie, Paris

October 1915 II No 5 pp 505 600

43 *Bullet in Bladder Removed by Natural Route (L extraction par les voies naturelles des balles de la vessie) F Legueu

44 *Transvesical Prostatectomy Under Local Anesthesia C Perrier
45 *Eosinophilia Not Constant With Hypertrophied Prostate (L'eosinophilie permet elle de diagnostiquer l'hypertrophie prostatique?) C Perrier and J Muster
46 *Deep Injections of Alcohol in Treatment of Neuralgia From Cancer in Bladder Prostate Region (Traitement des nevralgies dans les affections vesico prostatiques) L A Surraco
47 *Technic for Nephrotomy and Nephrostomy G Marion

43 **Extraction of a Bullet From the Bladder**—Legueu has always had to operate to get out fragments of shells from the bladder, but he has been able to remove by the natural route all the smooth bullets that have forced their way into and remained in the bladder The first thing is to be sure the bullet is actually inside the bladder, and loose The history of the case and roentgenoscopy are not always instructive, in one case the bullet entered by way of the shoulder The hematuria indicating the perforation of the bladder wall may escape detection, while in the reclining position the bullet in the bladder causes no functional disturbance and there is nothing to suggest that there is a bullet in the bladder until the man begins to be up and about Then vague pains at micturition may attract attention to the pelvis When the bullet changes its place abruptly with change of position, it is generally loose in the bladder He seizes it with a lithotrite, No 00, the blades of which are hollowed out a little The bullet is then easily drawn out by the tip or base Cystoscopy and anesthesia are not required

44 **Transvesical Prostatectomy Under Local Anesthesia**—Perrier combines various procedures for local anesthesia of the region, and extols the harmless and complete analgesia he has thus realized with the minimum of trouble and inconvenience The abdominal-vesical wall is anesthetized by infiltration and also the region on a line from ischium to ischium, passing in front of the anus This permits painless deep injection of the same solution, under guidance of the left forefinger in the rectum, it is injected under the capsule of the prostate, using needles 12 or 15 cm long With this finger the capsule can be felt distending as this is done Then with the same needles and a 1 per cent solution, the sacral nerves are blocked and the prostatectomy can then be done without fear of causing any pain, even under the most adverse circumstances, as in the obese

45 **Eosinophilia With Enlargement of the Prostate**—Perrier and Muster have been examining for eosinophilia in all cases of prostate enlargement and found it marked in 33 per cent of their twenty-two cases The absence of eosinophilia, however, in all the other cases deprives it of practical value as a sign of hypertrophy of the prostate Legueu reported recently that he had found eosinophilia marked in 87 per cent of his cases of adenoma while the eosinophils were below the normal figure in the cancer cases, among his eighty-five patients

46 **Alcohol Injections in Treatment of Sacral Neuralgia**—Surraco refers to the agonizing pains in the sacral region in the course of cancer in the bladder, prostate or urethra He places the patient under the influence of scopolamin and morphin and then injects the alcohol through the holes in the sacrum to act on the second, third and fourth nerves The second hole is on a horizontal line about 2 cm below the posterior superior iliac spine The other holes are about 2 and 4 cm below this, about 2 cm from the line of the spinous processes The needle is introduced for half a centimeter and 2 c c of alcohol are injected in each hole, each side of the median line In four extremely severe cases of neuralgia from cancer in the bladder or prostate a single sitting banished the neuralgia permanently during the three or five months to date in three cases *A second injection was required in the other*

47 **Technic for Nephrotomy and Nephrostomy**—This exposition of the fundamental principles for these operations is profusely illustrated Marion warns particularly against secondary hemorrhage, it is liable to occur toward the end of the second week, especially in *kidneys* with normal parenchyma but slightly infected The oozing may burst open the healing incision If sure of the other kidney, it may be wiser to remove the bleeding organ, otherwise, ligation and tamponing under constant supervision

Lyon Médical, Lyons

May, CXXV, No 5, pp 141 176

48 Amebic Abscess of the Liver Latent up to Perforation, Three Cases Cros and de Teyssier
49 *Paraffin Spray for Wounds (Note sur la paraffination et la ceration des plaies) H Bertoye
50 *War Wounds of the Ches, Fifty Three Cases (Les plaies penetrantes de poitrine par projectile de guerre Le syndrome hemo pleuropneumonique) Piery Concluded
51 The Depopulation of France and Means to Remedy It R Lepine Concluded

49 ***Paraffin Spray for Wounds***—Bertoye sprays a mixture of paraffin and petrolatum or wax on wounds and says that it protects the wounded tissues from injury from without, and that the dressings do not stick and the wound heals faster The paraffin can be medicated when desired The spray can be applied without fear of infection from the hands, and it is *proving* an *ideal* dressing for superficial lesions, mild burns, etc, as well as deep wounds after they have been cleared out and drained, reducing the pain and hastening healing He adds that as the paraffin layer is lifted by pus accumulating below, there need be no fear of holding back secretions

50 ***Wounds of the Chest***—Piery here summarizes his conclusions from study of *fifty-three cases* of penetrating wounds of the chest There is always intrapleural hemothorax and pneumonia always develops, the fever chart showing its rise and fall and relapses The tardy resolution and tendency to relapses are the special features of this type of injury Repose and revulsion, with ipecac and digitalis to combat the congestion in the lungs, *are the main factors in treatment* No attempt at operative treatment should be made, the hemothorax in particular should be respected, he insists The extraction of the projectiles in the wall should be deferred as long as possible Convalescence should be guarded with special care, particularly against chilling Prompt pleurotomy is indicated if pus is revealed by puncture

Paris Médical

May 20, VI, No 21 pp 473 488

52 Winter in a War Prisoners' Camp (Dans un camp de prisonniers en Allemagne) Ribadeau Dumas
53 Filiform Drainage Ensures Rapid Healing of Mammary Abscesses Without Scar (La guerison rapide et sans cicatrice des abces du sein) H Chaput
54 *Electrotherapy for War Wounds (Considerations sur l'utilisation* du courant sinusoidal alternatif dans l'electrotherapie de guerre) O Genevoix
55 Suggestions for *Safeguarding Interests of Physicians Absent on* Active Service (Le service medical des populations civiles et la defense des clienteles des confreres mobilises) Granjux

Presse Médicale, Paris

May 18, XXIV, No 28, pp 217 224

56 'Fraternitas Medicorum" F Helme
57 *Glycuronic Acid *in the Urine* *Variations in* Health and Disease (La glycuronurie) H Roger
58 Disturbance in Growth of Hair on the Limbs as Sign of Nerve Lesion (Les troubles du systeme pileux des membres) M Villaret
59 Pain From Injury of Nerve Plexus Spreads to *Other Side* (*Les* irradiations symetriques dans les lesions traumatiques des plexus nerveux) A Hesnard
60 Moving Pictures as Aid in Teaching *Obstetrical Operations* (De l'emploi du cinema dans les demonstrations operatoires d'obstetrique) V Wallich

May 22, No 29, pp 225 232

61 Diagnosis of *Complete Interruption of Popliteal* or Sciatic Nerve (Le diagnostic de l'interruption complete des gros troncs nerveux des membres II) Pr and Mme Dejerine *and J Mouzon*
62 *Palpitations *From* High Blood Pressure (Les palpitations par hypertension arterielle aux armees) C Lian

May 25, No 30, pp 233 240

63 Jointed Wooden Legs (Les pilons articules Leurs transformations — *leurs principes*) Ducroquet
64 *Favorable Action of Hypertonic Solutions Plus Liquid Paraffin for Dressing Infected Wounds (Action favorable des solutions *hypertoniques* et de l huile minerale dans le traitement des plaies infectees) A Goubaroff (Moscow)

57 **Glycuronic Acid in the Urine**—Roger remarks that now that we have simple and sufficiently exact methods for estimation of the glycuronic acid in the urine, it behooves us to ascertain its clinical significance He discusses its chemical composition, describes the technic for its deter-

mination, and reports the results of research on glycuronuria in health and disease especially with disease of the liver Glycuronic acid neutralizes the toxic action of a number of substances The active toxic element combines with the glucose or its derivative, and is thus rendered comparatively harmless As the liver stores up glucose, it seems natural to assume that this neutralizing occurs in the liver, and the amount of glycuronic acid in the urine is thus a gage of the functional capacity of the liver When the reserve of glycogen is low the glycuronuria declines A test dose of camphor, salol or naphthol will elicit a negative reaction if the liver is insufficient The glucose in the liver is not merely evidence of the functioning of the liver It aids in the formation of compounds of slight or no toxicity, compounded from elements otherwise toxic plus the glucose in the liver The glycuronuria thus affords insight into what is going on in the liver as he shows by the findings in twenty-nine cases of cirrhosis of the liver

62 **"Palpitations" with High Blood Pressure**—Lian warns that soldiers may present palpitations which are liable to be mistaken for a harmless nervous manifestation when in reality an abnormally high blood pressure is responsible for them Nothing but the sphygmomanometer will reveal the true state of affairs

64 **Hypertonic Solution and Paraffin for Dressing Wounds**—Goubaroff clears out the wound as usual and flushes it with an iso onic salt solution or Dakin's fluid Then he rinses it out thoroughly with an 8 or 10 per cent solution of salt, leaving a little in the wound, which is then fitted with large rubber drains and filled up with gauze impregnated with liquid paraffin The oil prevents the gauze from sticking while the hypertonic solution induces a copious discharge He relates that the wounds healed under this treatment better than with any other technic, unless possibly under exposure to direct sunlight

Progrès Médical, Paris

May 20 XXXII No 10 pp 73 80

65 Radium in Treatment of War Wounds (Radiumtherapie des blessures de guerre) Barcat
66 Apparatus for Extension of Fractured Phalanx P Batigne
67 Advantages of Kefir in Children s Diseases (De quelques emplois du kephir) A Satre

Revue de Chirurgie, Paris

February XXXV No 2 pp 177 336

68 *Treatment of Fractured Femur in War Twenty One Cases (Sur le traitement des fractures de cuisse en chirurgie de guerre) S Pozzi and A Peuret
69 Treatment of Severe Wounds in War 1 500 Cases (Les grandes blessures de guerre Etude sur 1,500 cas traites dans une ambulance chirurgicale de l avant) A Chalier and R Glenard To be continued
70 Strangulation of Small Intestine in Prolapse of Large Intestine Through Artificial Anus (De l etranglement de l intestin grele dans un prolapsus du gros intestin au niveau d un anus contre nature) M Guibe. Concluded
71 *Necessity for Operating Room and Work on the Firing Line (Le poste chirurgical avance.) J and P Fiolle
72 Simple and Easy Extraction of Needle from Cavity of the Auricle of Boy of Nine Prompt Recovery R Leriche.

68 **Fracture of the Femur**—Pozzi and Peuret have had twenty-one cases of extensive fracture of the femur, including six that were permanently clinically aseptic and fourteen with suppuration The treatment found simplest and most effectual was a combination of extension with suspension in a kind of hammock—the American apparatus as they call it One or more illustrations are given of each case showing the comparatively good results attained

71 **Operating in the Trenches**—Fiolle expatiates on the enormous advantage of immediate skilful surgical repair, and urges that bomb-proof operating rooms be dug out connecting with the system of trenches He says that no special heroism is required to operate in a bomb-proof shelter on the firing line In many systems of trenches an advanced surgical post of this kind would be very useful, but in others where the wounded cannot be transported by day it is absolutely indispensable and there should be an ample supply of surgeons

Correspondenz-Blatt fur Schweizer Aerzte, Basel

May 13 XLVI No 20 pp 609 640

73 Disturbances in Ossification in Regions Where Goiter Is Endemic (Ueber des Ossifikationsstorungen beim endemischen Kretinismus und Kropf) C Wegelin

May 20 No 21 pp 641 672

74 *The Psychic Action of Bromids Utilized in Treatment of Melancholia (Ueber psychische Wirkungen des Broms) A Ulrich
75 Packing Specimens to Send to Pathologic Institutes (Wie sollen Praparate an das Pathologische Institut eingesandt werden?) O Busse

73 **Defective Ossification with Endemic Goiter**—Wegelin says that at Bern the children are born with a more or less prominent goiter, almost without exception His study of cadavers of children stillborn or dying soon after birth has shown that abnormal ossification processes are common One manifestation of this is the lack of any center of ossification in the lower epiphysis of the femur at birth He tabulates the findings in 70 of these infant cadavers, including 39 from 50 to 56 cm in length and 31 only 45 or 49 cm long In 23 1 per cent in the first group the center of ossification here was missing as also in 61 3 per cent in the other group All but 6 of the children had a pronounced goiter The thyroid weighed 10 gm in a number, 20 gm in two, and in one 39 gm Among the 6 newly born with normal thyroids, the center of ossification was missing in only one, and this was a prematurely born infant He thinks there can be no doubt that the abnormal ossification processes are due to abnormal thyroid functioning Other data are cited to confirm this view, among them the necropsy findings in a man of 47 whose growth had been abruptly and permanently arrested at the age of 12 by a partial thyroidectomy for goiter The boy developed after the partial operation a condition similar to cretinism and was left practically a dwarf Wegelin recalls Lanz' experiments on hens fed with thyroid extract They laid more and larger eggs than the control hens, while the reverse was obtained by thyroidectomy The practical conclusion of Wegelin s research is the necessity of thyroid treatment for disturbances in ossification, at least in regions where goiter is endemic

74 **Psychic Action of Bromids**—Ulrich is director of the Swiss institution that cares for epileptics He here relates experiences which confirm the antagonistic action of salt in respect to bromids so that we have bromin poisoning completely under our control by regulating the intake of salt He has further established that the bromid modifies the mood to such an extent that it puts an end to melancholia, and he declares that we can banish melancholia at will by pushing bromid treatment without fear of bromin poisoning as we can annul the latter at any moment by increasing the intake of salt Extreme caution and individual study of the case are necessary but this systematic bromidization to the stage of cerebrospinal bromism he insists is no more dangerous than a general anesthesia Both require that the patient should be under constant medical supervision, his state of nourishment and heart and kidney action being under constant control The bromid must be pushed until there is actual tipsiness from it, the patient staggering in standing and walking as if drunk, with characteristic disturbances in speech writing and memory This *Bromrausch* should be maintained until the melancholia has given place to the characteristic euphoria or at least until the mood has completely changed In some cases repetition of a mild course has a better effect than a single intensive course The bromid is pushed while all salt is withdrawn The dosage ranges from 2 or 3 gm to 4 5 or 6 gm sodium bromid When the desired result has been attained the bromid is gradually reduced while salt is given more and more freely Bromid acne has nothing to do with the psychic action, and had better be avoided by giving a few drops of Fowler s solution twice a day after meals He reiterates that bromin seems to have a selective action on the excitement and depression of neurasthenics and certain epileptics, transforming them to a submanic euphoric mood Bromin poisoning has lost all its terrors since we have learned that it is completely under our control It is wrong to stop the bromid abruptly when an epileptic is taking it, increasing the intake of salt answers

This can be repeated daily for two weeks when done with great care to rinse out all the drug afterward and leave none in the stomach

113 **Frontal Sinusitis Revealed by Roentgenoscopy**—De Kleyn and Stenvers report two cases in which severe headaches were finally explained by roentgenoscopy which revealed suppuration in a frontal sinus Rhinologists had been unable to discover anything wrong on examination of the nose, the sinusitis running an entirely latent course except for the headaches

114 **Customs in Regard to Sickness in the East Indies**—This long article describes the various habits and customs of the natives in the Dutch East Indies in regard to pregnancy, parturition and sickness De Zwaan seeks to explain the rice-strewing and similar customs on an ethnologic basis

115 **Operative Treatment of Entropion**—Koster cuts three perpendicular oval pieces out of the lower lid and sutures the lips of each gap together, thus correcting the entropion If the patient refuses the knife, the same result can be obtained by taking up and suturing three folds in the lid

Hospitalstidende, Copenhagen

May 17, LIX, No 20, pp 465 488

118 The So Called Secondary Lichenoid Kerion of Celsius, Six Cases (Om de saakaldte sekundære likenoide Trikofytider) M B Pedersen

Hygiea, Stockholm

LXXVIII, No 3, pp 161 224

119 *The School and Infectious Diseases H von Matern

119 **The School and Infectious Diseases**—Von Matern discusses with much detail, including the results of personal experience, the length of the contagious stage and other problems of the control of acute infectious diseases He emphasizes in particular the necessity for intelligent and loyal cooperation between the school and the home, with concrete instances of what should and should not be done, and gives a tentative set of rules for the school and the family

Norsk Magazin for Lægevidenskaben, Christiania

May, LXXVII, No 5, pp 589 716

120 *Passage of Tubercle Bacilli into the Blood with Bone and Joint Tuberculosis (Om tuberkelbacillers overgang i blodet ved ben og ledtuberkulose) N Paus

121 *Research on Absorption from and Excretion in Effusions (Om resorption og utskillelse i patologiske væskeansamlinger, særlig pleuraekssudater) O Scheel

122 Recovery from Otogenous Suppurative Meningitis, Two Cases F Leegaard

123 Transposition of Viscera (Medfødt abnormt leie av tarmkanalen Retropositio coli) J Borchgrevink

120 **Tubercle Bacilli in the Blood with Bone and Joint Tuberculosis**—Paus presents evidence which confirms anew that the bearer of a tuberculous focus is liable any day to have it spread by passage of the bacilli into the blood and setting up of new foci His research confirms the clinical importance for tuberculosis in adult life of bone and gland tuberculous lesions in children Tuberculosis can lie latent through years and decades, but a focus once established always bears in itself the possibility of further spread of the disease when circumstances rouse it to flare up anew Paus' article is based on repeated examination of the blood from 50 patients with bone or joint tuberculosis Inoculation of animals he regards as the most reliable means for testing the blood, but only 6 gave a positive result Tubercle bacilli were never found but on one occasion in these 6 cases, the blood was sterile at all other times The positive findings were generally early in the disease and in the more acute types Only one of the 6 positive patients was well nour- ished, the others were debilitated The positive findings were about equally divided between the febrile and afebrile cases In 9 cases the blood was examined during or soon after tuberculin treatment but no tubercle bacilli were found In 4 of the 6 positive cases there were signs of renal tuber- culosis along with the bone tuberculous processes This combination is more than casual coincidence In his last 15 operative cases of kidney tuberculosis, there was a history of bone processes in 3 Multiple foci were common, espe- cially in the skin, various bones or joints, tendon sheaths, bronchial or other glands, intestines and meninges, and air passages The discovery of tubercle bacilli in the blood has no appreciable import for diagnosis, prognosis or treatment except in so far as it reaffirms the necessity for regarding tuberculosis as always more than a mere local affection Extermination of each focus, however, reduces the danger by just that much

121 **Absorption from and Elimination in Pathologic Accumulations of Fluid**—Scheel injected methylene blue or indigocarmin into the tissues or into the effusion and recorded the rate and time of the elimination of the stain in the effusion or other fluid and in the urine The results show that this may prove a means for estimating the prognosis In acute, transient pleurisy, for instance, the stain is promptly eliminated in the urine, and the pleural effusion soon shows no further traces of the stain, even when it had been injected directly into the pleural effusion The pleural effusion clears itself of the stain more promptly when conditions are approaching the stage of clinical absorption of the pathologic accumulation When there is a tendency to fibrous transformation, or the effusion is becoming organized, the stain lingers longest in the pleural cavity He tabulates the findings in forty patients with various effusions, ascites, etc Two weeks he found was the limit for absorption of the stain in the effusions with a favorable prognosis He further investigated the behavior of the stain in the blood

Ugeskrift for Læger, Copenhagen

April 27, LXXVIII, No 17, pp 635 696

124 Vestibular Nystagmus C Peschardt

125 Artificial Carbonated Baths (Kulsyrebade) A Faber and S Marcussen

May 4, No 18, pp 697 744

126 Chronic Habitual Constipation (Bidrag til den kroniske habituelle Obstipations Klinik og Røntgenologie I) T E H Thaysen Commenced in No 17

May 11, No 19, pp 745 784

127 Pituitary Extract in Intravenous Treatment of Obstetric Hemorrhage (Anvendelsen af Pituitrin som intravenøs Injektion, spec ved Blødning i Fødslens forskellige Tidsrum) A Tofte

128 *Research on Occult Bleeding (Undersøgelser over okkult Blødning) J P Gregersen Commenced in No 18

128 **Occult Blood in the Stools**—Gregersen tabulates the findings as 147 patients supposedly free from ulceration in the digestive tract were examined The subjects were the inmates of the medical ward, examined without discrimination The ages ranged from a few months to 87 years The diet in twenty-eight cases had included meat within a few days and the findings were constantly positive in this group In the 1,310 specimens from 147 patients who had had no meat within four or five days, the findings were constantly negative in all but eighteen Even in this group the reaction was negative in most of the tests The diet must not contain meat, but milk, butter, eggs, fruit, bread, potatoes, tea, coffee and cocoa and also well cooked fish do not modify the response As the various patients had been taking different drugs, the constantly negative reaction confirms that certain drugs do not affect the response to the test, namely, bismuth, iron, arsenic, mercury, barium sulphate, salicylic acid, tannalbin, antipyrin, hexamethylenamin, camphor, senna and castor oil None of these drugs or their derivatives seemed to modify in the least the response to the test His comparative study of the various technics for determination of occult blood in the feces confirmed the superiority of the benzidin test It is far simpler and quicker, while it is *fifty* times more sensitive than the Weber or other technics This test applied to scraps of feces taken as far apart in the stool as possible gave always the same findings, confirming the regular blending of the feces throughout Ingestion of four doses of 0 3 gm blood, each, was followed by a positive response to the benzidin test without fail The benzidin solution must be made fresh each time, dissolving 1 per cent pulverized benzidin in equal parts glacial acetic acid and hydrogen dioxid Ten or 20 drops are then dropped on the thin layer of feces on an object glass In less than a minute a green, bluish-green or blue tint appears in case of positive findings, and the tabulated data confirm the clinical importance of a positive response

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STANDARDS FOR DETERMINING THE SUITABILITY OF PATIENTS FOR ADMISSION TO A FREE DISPENSARY

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It is the purpose of this paper to discuss the results of a study of outpatient clinics, and it deals in particular with the standards adopted by the Washington University Dispensary for judging the financial suitability of applicants for admission

THE PROBLEM

In December, 1914, three distinct outpatient clinics connected with the Washington University Medical School or its affiliated hospitals were merged into one dispensary, moved to a new location in a distant part of the city and the old clinics closed Although a comprehensive system of records and administration was prepared in advance, a number of conditions arose requiring study and adjustment Among the more complex of these was the question of the suitability of patients for admission The old clinics were located in the poorer portion of the city and in part in what is now the negro segregation district, while the new clinic is in the residential district A large number of the applicants for admission were old clinic patients who made the long trip to the new location, but it soon became apparent that a new clientele was coming from all parts of the city, greater in number than that of the three old clinics combined For some time the question of the suitability of patients for admission was handled entirely by the social service department, but it soon developed that the functions of this department were being subverted to those of a detective bureau At their request a committee was appointed to establish standards for the admission of patients to the dispensary This committee consisted of Miss Julia Stimson, head social service worker, and Dr G Canby Robinson and myself from the dispensary committee of the medical school

Our first work was to get into communication with a number of the larger clinics in the country to obtain their standards of admission We inquired as to the grouping and classification of patients, what was considered financial suitability, what investigation of patients was made, and the attitude of outside physicians toward the clinic The following abstracts are from some of the replies

Philadelphia—The doctors here have almost no interest in the matter We practically are never asked to investigate cases Patients are grouped into (1) refused (those able to afford a physician and who have not been to an outside physician previously), (2) consultation cases (those seen once for diagnosis and referred outside for treatment), and (3) regular cases We reckon a family of five with $70 a month can pay a doctor for ordinary ailments All investigations are made through the social service department, as otherwise there would be as many bases for decision as there were doctors

Baltimore—I do not see how it would be practicable to adopt a table of income, which would be the basis on which one would determine that a patient is financially unsuitable for treatment in the dispensary Most of the patients admitted to the hospital wards are first examined in the dispensary In this clinic there are no "standards," nor is there any attempt at financial investigation

Cleveland—Cases are grouped as to whether suitable for all conditions (A) or for special work, etc This clinic would admit a working man with a family of five children in "A" (all conditions) if daily wage is $1 75 ($49 per month) or less, or into "C" (needs great or special) if he received from $2 to $2 25 per day (from $56 to $63 per month) The figure based on economic and sociological studies should be the ruling figure in all communities, but it is not and will not be until the old question of dispensary abuse and opposition to dispensaries by local physicians is done away with

Boston—We have not reduced our policy to writing In practice our working standard has been that an income of approximately $1,000 a year seemed to us necessary before a family of four or five persons should be expected to pay for medical service The patient is then interrogated by our admitting physician, who makes up his mind the best he can, but without any definite financial standard, whether the patient can pay or not In my opinion this financial investigation, so-called, is worthless

These are representative of the replies received They make certain things clear First, there are no definite or established standards in use on which to judge of the suitability of dispensary applicants Secondly, there is no attempt by the majority of clinics to classify patients except by disease Third, the question of financial suitability and investigation, while admittedly an important factor, has been worked out largely in a haphazard way, and all figures used are purely arbitrary These figures vary all the way from $50 to $100 a month for a normal family, and obviously both cannot be correct as there is not a 100 per cent difference in the cost of living between any two of our cities The committee thus found that the methods and standards of other clinics were of questionable value, and a study of the entire question was undertaken

TYPES OF CLINICS AND THEIR DEVELOPMENT

In order fully to grasp the subject of the medical dispensary, or clinic, it is essential to have a clear conception of its origin, growth and development, as its present day problems are to a large extent the result of changing social, economic and medical conditions

There are two more or less distinct purposes for which dispensaries have been developed (1) as a means of collecting material for the teaching of clinical medicine, and (2) as a means of furnishing free treatment to the indigent poor who for social or economic reasons are unable to pay for the services of a physician As a rule, these clinics are connected with hospitals, but a few are independent or municipal

The first group, teaching clinics, are rapidly diminishing in number, hand in hand with the decrease in the number of medical schools Some, like the Washington University Dispensary, are maintained by schools and are independent of hospitals, while others are clinics of the second type with which the medical school has some form of connection To a very large extent these clinics are charity clinics, and hence what is said below applies to them Theoretically, there is the possibility of these clinics attracting persons not absolutely worthy objects of charity because of the prominence of the institution or of certain members of the staff As a matter of fact, experience has shown that the objection to being used as material for teaching actually drives away a great many patients who are worthy of free treatment This has become so marked a feature in some teaching clinics that there has been insufficient material for the purposes of instruction The necessity of material for the instruction of medical students is so obvious that there can be no question as to the right or propriety of any legitimate medical school conducting a dispensary, provided it has a fixed rule that any patient refusing to act as material for purposes of instruction is refused admission Should a teaching clinic lack material for purposes of instruction, it might with propriety lower its standards for admission, as it is not a purely philanthropic institution and the end in view justifies the purposes for which this is done It is hardly consistent for a physician who has enjoyed the benefits of a thorough medical education (the average cost of instruction for the four years being around $3,000 and the tuition charges from $600 to $800) to object to a clinic connected with a medical school on the ground that the clinic lessens the financial returns from private practice

By far the larger proportion of outpatient clinics have been developed with the idea in view of caring for individuals who are unable to pay for competent medical advice and treatment It is not my purpose to discuss the various causes or aspects of poverty except to call to mind that ill health, in itself, is one of the most common causes of improvidence, and hence of inability to pay for the medical attention necessary in order that the patient may be restored to health To a very large extent the development of poverty in this country has gone hand in hand with the gradual change from a rural to an urban population and the massing together of people in the cities In the rural districts or small cities the poor form a relatively small percentage and are not segregated Under these circumstances the question of medical service for the poor has been settled by having each individual physician assume a certain share of the free work in the community without allowing this to become an overwhelming burden As the cities have grown with the drift of the population to industrial centers, the relative number of dependents has increased, and, what is more important, they have collected in certain quarters or districts The physicians in these districts would be overwhelmed by charity work if they had to assume the entire burden If many of these sick poor were forced to pay for medical treatment they would in turn be forced to a condition of living which would in itself tend to aggravate the physical condition Recent "health surveys" have shown that even in cities with free clinics a large percentage of the sick are without the services of a physician This is the underlying factor in the development of medical dispensaries, that is, they are an attempt to meet the results of economic conditions

The system is in itself inherently wrong, for often persons are forced by it to accept private charity for what in reality is a condition for which society as a whole is to a large extent responsible and which should be a burden of the state It should not be necessary for a few individuals and the medical profession as a whole to have to bear the burden of these economic conditions In the older cities and countries of Europe it is recognized that the state must care for those persons who are ill and improvident, and various types of industrial, health and unemployment insurance have been devised In America there are state and municipal hospitals, but there is no general system of caring for ambulatory patients with minor or chronic forms of illness which do not require hospital care, and which permit the patient in many instances to work for a part of the time

In the older cities where there has been extensive poverty for many years, the free medical clinic supported by private charity has been developed to meet these conditions and has been accepted as necessary by the medical profession, although many objections were urged against this in earlier days In the younger American cities, where the results of our economic and social system are just beginning to make themselves felt, the "free clinic" is again becoming the object of attack by members of the medical profession A large part of the opposition to such clinics is due to the failure of physicians to grasp the evolving economic conditions underlying the necessity for some efficient form of medical service for the poor and unfortunate of the community In January of the present year a bill was introduced into several of the state legislatures through the efforts of the Social Insurance Committee of the National Association for Labor Legislation which specifies compulsory health insurance for all families with earnings less than $100 a month Within the next few years a bill with similar purposes will undoubtedly pass many of our state legislatures, and it will materially affect the practice of medicine and change the character of the present free clinics or dispensaries

Until some such form of insurance is established, the free clinic is apparently the only solution of the problem which, briefly stated, is to furnish an efficient type of service at the lowest possible cost to those persons who are deserving of free treatment Although it has no official standing, it has a duty and certain obligations to society at large, to the sick person and to the medical profession In any discussion these points must be considered and kept in mind, as when the dispensary as at present conducted is viewed from any one aspect alone, a very much distorted conception of the whole is obtained

THE COST OF LIVING AND ITS RELATION TO FREE MEDICAL TREATMENT

It is apparent to any one giving the matter a few moments' thought that from a financial standpoint there is a line of division between patients entitled to free treatment and those from whom payment for the physician's services can be rightly expected • This line, or zone as it might better be termed, is to a certain extent a variable one, depending on the conditions present in each individual case, and in a broad way on the relation between the income and cost of treatment But there is a certain minimum figure or income below which there can be no question as to the financial suitability of an applicant for free treatment

In its broad aspect this figure should be one which allows of a decent standard of living and includes adequate food, clothing and shelter, for without these three things health will suffer and the race will undergo physical degeneration Moreover, these are things which society owes to the individual and which are necessary from a moral and ethical standpoint This necessary income is dependent solely on the cost of living and must be decided on this basis

There are two methods of obtaining family budgets One is to figure out theoretically the least a family of a given size can live on and determine the cost of the various items This method, though frequently used, is inaccurate, and the figure represents not what it actually costs to live, but what the person making the estimate thinks should be allowed The second method does away with theory and ascertains the cost of living by tabulating the actual budgets or amounts spent by families of different sizes It is only in this way that figures of any value can be obtained, and only studies in which this method has been used have been utilized in this report

In many respects the most valuable study in this line was made by Chapin[1] nine years ago Although in many respects his actual figures are no longer of much value because of the subsequent increase in the cost of living, the method used has served as a model for subsequent investigations, the results of which we have utilized Chapin's figures are based on the so-called "normal family" of five persons, a working man, a woman at home, and three children under 15 years of age (not producing incomes), and were obtained by compiling the actual figures of a large number of families in regard to the income, and the detailed expenditures for food, clothing, lodging, heat and fuel, insurance, health and sundries His conclusions were that from $600 to $700 a year income is wholly inadequate to maintain a proper standard of living, with an income between $700 and $800 a family can barely support itself, provided it is subject to no extraordinary expenditures by reason of sickness, death or other untoward circumstances, $825 is sufficient for the average family of five to maintain a fairly proper standard of living in New York City

In the group of from $700 to $800, the average expenditure was $735 98, which was divided as indicated in Table 1 This sum is $90 less than the figure of $825 which Chapin considered necessary to maintain a decent standard of living for a normal family It will be noticed that there is no provision for savings or recreation The division of the clothing item shows how seemingly inadequate the amounts are total, $98 79 a year, divided into man, $33, woman, $23, two children, $30 ($15 each), one child, $12

The point of Chapin's work is this Normal families were just able to eke out a mere living on an income of between $700 and $800 a year provided no emergency such as ill health arose

These figures are for 1907, and since that time the cost of living has increased some 16 per cent according to United States government reports Within the last year two reports have been issued which we have been able to use and which give more accurate data One was a very extensive report of the New York State Factory Investigation Commission,[2] in which Chapin's methods were utilized The other was the report of the New York City Board of Estimates,[3] which studied the cost of living for unskilled laborers Both reports deal with the cost of living for a normal family in New York City The total figures are $840 18 and $876 43, respectively In Table 2 the two budgets are itemized, and in a third column they are averaged

TABLE 1—DISTRIBUTION OF EXPENDITURES ON INCOME BETWEEN $700 AND $800

Items	Amount	Percentage of Total
Food	$335 82	43 6
Rent	161 36	21 9
Clothing	98 79	13 4
Light and fuel	36 94	5 0
Insurance	18 24	4 5
Health	14 02	1 9
Carfare	10 53	1 5
Sundries	60 28	8 2

The average of the two figures is in all probability approximately correct, and will be used as a basis for our purposes This sum, $858 30, is the actual cost of living for the average normal workingman's family in New York, and is the minimum figure at which a decent and efficient standard of living can be maintained It includes a figure of $21 a year for health, physicians' and dentists' services and medicine for five persons, and makes no provisions for savings, as the insurance is only burial insurance Since for our purposes we are trying to obtain a figure below which free medical treatment is unquestionably justifiable, it is necessary to deduct the item for health As we have no data for subdividing this item, we have deducted the entire sum, $21, making a total of $837 30

At once the question is raised, Can these figures be used for St Louis? Is not St Louis a much less expensive city to live in? If there is any material difference it would be in two of the items, namely, those for food and housing This point is a very difficult one on which to obtain exact data In 1909, however, a commission of the British board of trade investigated the budgets of over 90,000 families in twenty-eight cities in America In their comparative studies, the cost for housing and food in New York City was placed at 100 units, and this served as a base line On this basis the cost of housing in St Louis was 101, and of food 97 In Table 3 the comparative cost of these items for some of the larger American cities

TABLE 2—COST OF LIVING FOR A NORMAL FAMILY IN NEW YORK

Items	Board of Estimate	N Y S Factory Commission	Average
Food	$380 00	$325 00	$352 50
Rent	168 00	200 00	184 00
Clothing	104 00	140 00	122 00
Fuel and light	42 00	20 00	31 00
Carfare	30 30	31 20	30 75
Insurance	22 88	35 60	29 24
Health	20 00	22 00	21 00
Sundries	73 00	102 63	87 81
Totals	$840 18	$876 43	$858 30

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[1] Chapin Standards of Living Among Workingmen's Families in New York City New York 1907

[2] Fourth Report of the Factory Investigating Commission New York 1915 iv 1461

[3] Report of the New York City Board of Estimates on the Cost of Living for Unskilled Laborers New York 1915

is given A combination of these two,[4] food three units and rent one unit, gives New York, 100, St Louis, 98

Therefore we have the right to assume that the figures for New York are approximately (within 2 per cent) correct for St Louis

As the result of some investigations of my own, however, I am convinced that the figure for housing in St Louis is high In certain sections of the city, homes of the type which these figures represent are cheaper than in New York I have therefore deducted 20 per cent from the cost of housing, and in this way have reached a basic figure of $800 A yearly income for a normal family of five below this figure entitles them to free treatment for any kind of illness and on all occasions

TABLE 3—COMPARATIVE COST OF HOUSING AND FOODS

*Housing**			*Foods†*		
Rank	City	Units	Rank	City	Units
1	St Louis	101	4	Boston	105
2	New York	100	14	New York	100
8	Boston	82	16	Cleveland	99
10	Philadelphia	79	19	St Louis	97
17	Chicago	71	22	Philadelphia	96
20	Cleveland	64	25	Chicago	94

* Report, p 516
† Report, p 531

The average working or laboring man has but little knowledge of his annual income or earnings, and always refers to his earnings by a weekly or monthly wage If every one were working constantly, week in and week out, it would be a simple matter to divide this figure by fifty-two or by twelve to obtain the weekly or monthly wage needed to make up this sum But the figure of $800 is based on the cost of living and not on the wage, and hence it is necessary to consider the question of unemployment Accurate figures for the extent of unemployment are exceedingly difficult to obtain as they fluctuate with trade, season and weather As one third of the unemployment is attributable to ill health or sickness, we are, from the very nature of our study, dealing with a group of persons in whom unemployment is bound to be high The best summary of all the available data is that of Nearing,[5] who devotes a chapter to this subject, and who concludes that 20 per cent of a workingman's time, averaging all industries, and skilled and unskilled labor, is spent in unemployment

Consequently, unless there is a steady employment, to obtain an annual income of $800, the weekly or monthly wage rate must be 20 per cent higher than a weekly or monthly rate exactly totaling this sum In this way (by adding 20 per cent) we have figured the weekly wage rate sufficient for the bare cost of living for a normal family throughout the year, without provision for health or savings, to be $80 a month or $18 50 a week

This figure applies to the total income of a normal family in which there is but one wage earner As the children grow older and begin to earn, the additional wages must be added to that of the man, but it must be remembered that the family expense or cost of living increases at the same time for the clothes, carfare, etc , of the additional wage earner

From this basic figure it is possible to construct a table of the cost of living for families of different sizes, except for the person living alone The items undergoing a change in proportion to the size of the family are those of food, rent and clothing, the others remaining more constant The method used is to add or subtract the proportionate cost for a person of a certain age

Food is estimated in units based on 10 units for an adult male, and 8 for an adult female (Atwater) The children are reckoned on the basis of 7 units for Child A, from 10 to 15 years, 5 units for Child B, from 5 to 10 years, and 3 units for Child C, under 5 years Thus a total of 33 units for the normal family is reached This makes each food unit approximately equal to $11 a year

The cost of clothing, using $122 as the amount required in a year, is apportioned as follows man, $45, woman, $32, Child A, $17, Child B, $15, Child C, $13[6]

If a three room house costs on an average $147 a year, the cost of two rooms is approximately $108 and of four rooms $173 per year Counting one and one half persons to a room, a recognized standard, we find that a family of two or three requires at least two rooms, four or five three rooms, and six or seven, four rooms

From these factors we can obtain the cost of living for families of sizes other than the normal, and the weekly or monthly wage rate necessary to obtain this sum The factors used for food and clothing are given in Table 4 Two rooms cost approximately $108, or $9 per month, three rooms, $144, or $12 per month, and four rooms, $180, or $15 per month

As for our purposes a fairly close figure is all that is needed, and as we have a factor of 20 per cent unemployment which allows for considerable minor fluctuations, we can group the figures of Table 5 into few classes, which is essential for practical purposes (Table 6)

In the matter of persons living alone (boarding) other factors must be considered, and the cost of living cannot be obtained from the figures of a normal family, nor can the same figure be made to apply to the two sexes A great deal of material has been gathered on the question of the working woman in reference to minimum wage legislation, but comparatively little on the expense of a man living independently It is impossible to consider much of the material in detail, but in making up our estimate the reports of the Oregon, Massachusetts and New York studies have been made use of, and such reports as Bulletin 167 of the United States Bureau of Labor A good report[2] is that of the New York State Factory Commission for 1915 Certain factors in this report are of interest in our study

TABLE 4—FACTORS AND EXPENDITURES FOR FOOD AND CLOTHING

Persons	Factors Used		Amount per Year
Adult man	Clothing	45	$155
	Food	110	
Adult woman	Clothing	32	120
	Food	88	
Child A (10 15 years)	Clothing	17	95
	Food	78	
Child B (5 10 years)	Clothing	15	70
	Food	55	
Child C (under 5 years)	Clothing	13	45
	Food	32	

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[4] Bull 93, Bureau of Labor, Dept of Commerce, 1911, p 536

[5] Nearing Wages in the United States, New York, The Macmillan Company, 1911

[6] Any one wishing to see what these sums will buy is referred to the New York State Report of the Factory Investigating Commission p 1661 et seq

First let us consider the cost of living for women at work About two thirds of the women at work live at home, and in the majority of these homes (four fifths) there is a man at work for wages So far as we are concerned, we must include the wages added by these additional workers to the total family income But at the same time there is an increase in the cost of living, as the clothing, food and sundries cost more for the employed woman than for the housewife, in addition to extra carfare It is obvious that a clerk cannot dress on $33 a year and keep her position An approximately correct figure can be obtained if $2 a week or $9 a month is added to the cost of living for each "A" child in our tables This comes fairly near the increased cost for an employed woman or girl in the family Against this increased cost, however, the additional weekly wage must be added to the income, as we must consider the family income as a whole without paying any attention to its proportional distribution It is an economic fact that there is a tendency for the earnings of the head of the family to decrease as the children grow up and begin to add to the family income

For the working woman living independently the factor of board at a profit rather than at cost enters in to increase the cost of living In addition there is an increase for clothes and laundry which adds considerable to the cost of living The minimum budget for a working woman in order that she may maintain herself at a standard of decency in New York is given in Table 7

Inquiries made through the Young Women's Christian Association show that $4 a week for room and board is a minimum standard for St Louis, and the other items remain the same This would require a steady income of $8 65 a week with no allowance for health Adding our 20 per cent for unemployment (seasonal, industry and health) we find that an income of $10 a week is necessary for a working woman living independently and without family aid to fall back on in case of illness As a matter of fact, a large percentage of women living independently do have help to fall back on in case of necessity (as ill health) and hence should be regarded with the family income group

TABLE 5—EXPENDITURES AND NECESSARY INCOMES OF FAMILIES OF DIFFERENT SIZES

Size of Family	Actual Cost of Living a Year	Weekly Wage Required	Monthly Wage Required
Man and woman	$ 554 00	$12 75	$55 50
Man woman and Child C	599 00	13 85	60 00
Man woman and Child B	624 00	14 40	62 25
Man woman and Child A	649 00	15 00	65 00
Man, woman and Children B C	70 00	16 30	70 50
Man woman and Children A B	755 00	17 50	75 00
or			
Man, woman and Children B C C	750 00		
Man woman and Children A B C (normal family)	800 00	18 50	80 00
Man woman and Children A B B	825 00	19 25	83 00
Man woman and Children A, A B	850 00	19 60	85 00
Man woman and Children A B C C	881 00	20 15	88 00
Man woman and Children A B B C	906 00	20 50	90 50
Man woman and Children A A B C	931 00	21 40	93 00
Man woman and Children A A B B	985 00	22 70	98 50
Man woman and Children A A B B C	1 010 00	23 70	101 00

For a man living alone the increased cost is about 10 per cent additional, or $11 a week In both cases where there is steady employment the cost of living should not include the 20 per cent increase From this brief statement based on studies of minimum wage reports, and the cost of living, we can place our figures as follows

1 Men or women living independently but with family aid to fall back on in case of necessity (ill health) are to be included with the family group

2 Men, living independently, at labor in which there is a steady employment, are entitled to free treatment with a weekly wage rate below $9 50 a week

3 Women under similar conditions are entitled to free treatment at a weekly wage rate below $8 75 a week

4 Men, living independently, at work in an industry with much unemployment, are entitled to free treatment when the weekly wage rate is below $11

TABLE 6—NECESSARY INCOMES OF FAMILIES OF DIFFERENT SIZES

Size of Family	With Average Unemployment Weekly	With Average Unemployment Monthly	With Steady Monthly Income
Man and woman	$12 $13	$55 $60	$45 $50
Man, woman and child	14 15	60 65	50 55
Man woman and two children	16 17	70 75	60 65
Man woman and three children	18 19	75 85	65 70
Man woman and four children	20 22	85 95	72 77
Man, woman and five children	23 25	100	85

Women under similar conditions are entitled to free treatment if the weekly wage rate is below $10

With the basic principle involved in this group there can be no argument There may perhaps be some ground to question the accuracy of the figures arrived at in our study In fact, they have been criticized as being too high by some workers to whom they have been submitted and too low by others They represent, however, so far as I know, the only attempt to work out such a figure on what might be termed a scientific basis I recognize their shortcomings and limitations

THE INCOME AND NEEDS OF THE PATIENT IN RELATION TO THE COST OF TREATMENT

Although, theoretically at least, it is possible to set apart one group entitled to free treatment because of an income below a certain fixed figure, it by no means holds that patients with an income above this figure are able to pay for medical services A great many variables, chiefly the amount of income above the basic line, the nature of the illness, and the cost of efficient treatment, must be considered here Thus a group of patients with an income slightly above the line of division is able to pay for treatment for a minor illness or injury but would be forced deeply into debt if the illness was long drawn out or of such a nature that the services of a number of skilled specialists were required A concrete example will serve to illustrate the general question involved A man with a wife and child has been earning about $80 a month when employed, and has been going to a neighboring physician for years His income has been just enough to live on efficiently, but not enough to provide for savings He develops failing vision, and a proper diagnosis requires the services of an ophthalmologist, laryngologist, a neurologist and perhaps an internist or brain surgeon It is obvious that he cannot pay the average specialist's fees for these examinations and continue to pay his private physician at the same time without lowering the standards of living for his family below the line of efficiency and decency

We are dealing here with a phase of medicine which is coming more to the front every day and with increasing complexity With the rapid development of the medical sciences and of delicate laboratory aids in diagnosis and treatment, it is becoming more and more impossible for a physician to cover effectively all fields of medicine, and the resulting specialization in itself leads to each field becoming more highly specialized This complexity of modern medicine with its resulting increased cost is an urgent and pressing problem and must be considered

In attempting to grapple with this problem from the standpoint of the free dispensary, the committee sent out a letter to seventy-seven specialists in four different lines of work in St Louis, in order to try to find out just what efficient treatment costs in certain conditions The idea back of the letter was that it might be possible to work out some sort of sliding scale whereby persons with a certain income above the base line would be suitable for free treatment for certain conditions, but not for others, depending entirely on the cost of the medical services required This we were unable to do in even a rough sort of way We reached the conclusion that each case must be individualized and settled on its own merits by trained social workers, or, in brief, in the way in which we have been working in the past

A third group which we were able to set apart is to a certain extent closely allied It consists of those persons who are "temporarily embarrassed" financially, and whom a helping hand may start on an upgrade which will keep them permanently above the poverty line, *while to force them still further into debt would* probably end in their becoming permanent dependents, a situation well known to social workers Although each of these cases must be individualized as *in the* second group, the group seems to be a distinct one

TABLE 7—MINIMUM BUDGET FOR A WORKING WOMAN *

Items	Expenditure
Clothing	$ 88 00
Laundry	20 80
Room and board	208 00 ($4 a week)
Lunches	46 80
Carfare	31 20
Insurance	20 00
Amusement and recreation	26 00
Health and incidentals	26 00
Total	$466 80

* New York State Factory Investigating Commission
Deduct $16 for health, and we have a balance of $450 80

A fourth group is one composed of patients sent to the dispensary by a physician with a letter stating that a consultation is desired and that the patient is unable to pay a consultant's fees These patients are often of distinct value to a teaching clinic, and they represent obscure and unusual conditions

DISPENSARY ABUSE

I have intentionally reserved until last what, from a logical standpoint perhaps, should have come first, that is, the question of the need for standards and the need for such a study as this In brief, it is the question of "dispensary abuse" This term is usually used to mean the treatment in a clinic of persons who are able to pay for the services of a private physician Discussions of this subject are usually prefaced by the citation of an individual case which is magnified into the assumption that the majority of cases coming to the clinic are in the same category As it is never denied or even assumed by those in charge of a dispensary that a certain proportion treated have imposed on the dispensary, this citation of individual cases is without point

As a matter of fact, "abuse" as it is seen in a dispensary is a much bigger problem It includes negligence on the part of physicians, overcharging and petty graft, all of which come to light in studying the histories of a large dispensary However, as this paper deals with the question of financial suitability, our discussion is limited to the form of "abuse" in the sense in which the term is usually used

The question must be studied in regard to what constitutes abuse, the extent of such abuse and the methods of elimination

By our method of study it is difficult to define what constitutes financial ability to pay for medical services Primarily, it is a question of income in relation to the cost of living But we must also take into consideration the type of illness and the cost of treatment We can fix a line, as we have done, an *income below which* entitles the patient to free treatment, but above these figures each case becomes a law unto itself Thus a family of a certain size with an income of $90 a month would be unsuitable for free treatment, but a family of the same size with debts the result of long standing illness *might be a very worthy object of charity* We are unable to grasp the logic back of the idea that a case treated free in a physician's office is unsuitable for *free treatment in a dispensary*, as has been urged, on the ground that the patient may at some time be able to pay for the service The complexity of modern *medicine with the highly specialized departments and* intricate methods of laboratory diagnosis have added a more and more complicating factor to the question of whether or not a patient can afford to pay for medical services Realizing, then, that it is a difficult factor to determine just what constitutes abuse and that above a certain income line every case must be individualized, we can take up the question of how much abuse actually exists

In 1910, an investigation was made in New York[7] which showed that 672, or 90 per cent, of 745 patients treated were worthy of free treatment, and New York has always been pointed out as a city in which the multiplicity of clinics has fostered this type of abuse A recent similar investigation covering 1,881 patients applying for admission at the Boston Dispensary showed *that only* 2 per cent were able to pay for the services of a private physician[8] A recent investigation at the Presbyterian Hospital in Philadelphia showed that "abuse" was a *very minor factor* (2 per cent)[9]

Some time ago the Washington University Dispensary investigated from a financial standpoint 932 consecutive new *patients applying at the desk for admission* Ten per cent of these were financially unsuitable for free treatment But of this 10 per cent, 80 per cent were the type of case which would as a *routine* be refused admission at the desk or referred to the social service department for further investigation Thus but two patients in every hundred applying who were not deserving of free treatment *would have been* treated This is certainly a small percentage of imposition, and much less, I imagine, than the percentage of the average physician's patients who are "bad pay" The cost and time involved thoroughly to investigate every applicant in order to eliminate this 2 per cent is not worth the effort or expense It would be comparable with a physician making a careful financial investigation of each patient in order to eliminate 2 per cent who were bad pay

Home investigation, for financial reasons, gives practically no information that cannot be gained on questioning by a competent and experienced investigator Certain people will lie about their financial condition just as certain others will lie about their taxes or income returns Experience has shown that in our clinic only 2 per cent cannot be accepted at their face value, and, as stated, we do not believe that these 2 per cent are particularly desirable patients for a private practice It would require the services of a large number of full time workers to make any attempt at more than occasional home investigation, and it has been reckoned that such calls would cost, on an average from 30 cents to 50 cents for each patient, or from $6,000 to $10 000 a year for our clinic It must be recognized that a medical clinic is fundamentally a relief charity rather than a corrective one As a matter of fact the Washington University clinic spends nearly $100 a month in the matter of investigation to avoid this so-called dispensary abuse, which is a sum, I venture to say, larger than is spent in any other clinic in the United States for the same purpose We recognize that abuse to a certain extent does creep in, and the committee discussed the question with many physicians with the hope of obtaining some sensible and practical suggestions of methods of elimination So far the criticism has been purely destructive in character

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[7] Report of Committee on Dispensary Abuse of the County Medical Society of New York, New York State Jour Med 1913, xiii, 48

[8] Davis Dispensary Abuse, Med Rec, New York, Sept 12, 1914

[9] Jobes and Hostetter Mod Hosp, 1914, v, 321

At times the dispensary workers feel that the statements made by applicants are untrue Recognizing that people will often balk at putting in writing what they have stated orally, a simple printed form to be signed stating that the applicant is unable to pay for medical services is desirable, under such circumstances

It may not be out of place to discuss here the question of patients applying for treatment to the dispensary and not asking or expecting free treatment Most of these have become dissatisfied with their physician and state frankly that they have lost confidence in him Many tell stories of gross negligence and incompetence, even malpractice, on the part of the physician Although most of these stories may be discounted as exaggeration on the part of the patient, it is nevertheless true that many have been "abused" by their physician These persons do not ask free treatment, they ask only to be referred to a competent physician in whom they can have confidence The dispensary has a definite moral obligation to the individual and to the community in these cases, and the dispensary admitting office refers them to members of its staff who are also practicing In these cases the patient and physician do not come into touch with one another at the dispensary, and the patient is referred to the physician without his knowledge No honest criticism can be directed against this method The practice of physicians working in a dispensary referring patients to their private offices under the guise of more time required for proper treatment, etc, is an entirely different proposition, and is mentioned only to be condemned

SUMMARY

Inquiry has shown that a definite standard of financial suitability for admission to free dispensaries has not been based on a study of the economic principles involved There are two more or less distinct purposes for which dispensaries have been established, namely, for purposes of medical education and as a means of furnishing free treatment to the indigent poor Each type of dispensary serves a purpose valuable in itself to both the medical profession and the public Although it is natural to consider whether the same standard of admission is suitable for each type of dispensary, no such difference has been used in working out the standard described in this paper A basic income has been worked out for various types of families and individuals, below which patients should receive free medical services, and a classified scale is described for extending this standard for specified purposes

The problem of dispensary abuse is in reality not so big as it is generally considered Investigation shows that the actual percentage of abuse, where an effort is made to eliminate it, is small, and that but 2 per cent of the patients being treated at the Washington University Dispensary are financially unsuitable for treatment The various means so far suggested to eliminate this 2 per cent are impractical

St Louis Children's Hospital

A CRITICAL ANALYSIS OF OUTPATIENT WORK FROM THE POINT OF VIEW OF EFFICIENCY *

LOVELL LANGSTROTH, M D
SAN FRANCISCO

This statistical study of a number of records of the medical department of an outpatient clinic has been made in the hope that a consideration of the end-results of the various examinations and diagnostic procedures might make for greater efficiency in outpatient work Such a clinic as the one in which these records were made is coming to do a larger and larger part of the medical work of the community and is, morally at least, responsible to the community for the speed and effectiveness with which it does the work Time is an item of the greatest importance to these patients, particularly because its loss entails a much larger decrease in income to them than to those of a higher social status For this reason the time element has been considered along with the other factors in estimating efficiency

Three hundred and forty-eight records form the basis of this report Cards were headed with the following questions, the records examined with these points in mind, the case number noted on the card, and the tables and conclusions made later

1 Age
2 Sex
3 Number of visits necessary for diagnosis
4 Visits after diagnosis
5 Visits insufficient for diagnosis
6 Diagnosis made
7 Roentgen-ray examinations
8 Von Pirquet tests
9 Laboratory tests (sputum, stool, blood, kidney function, test-meal, Wassermann)
10 Referred to the hospital
11 Referred to other departments of the outpatient department
12 Benefited
13 Returning after three months

1 *Age*—The curve plotted in the accompanying chart shows that the second and third decades present a larger percentage of attendance than any of the others The curve reaches its summit at the third decade, with 23 per cent of the whole number of patients, and then sinks steadily to the eighth

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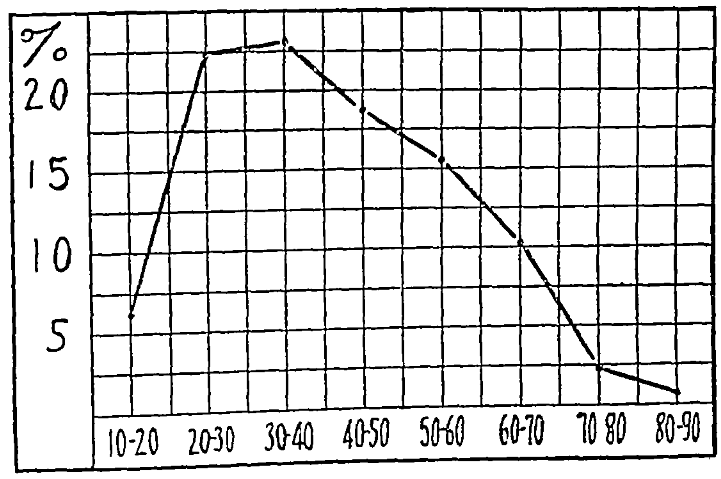
* From the University of California Medical School

Table 1 shows the frequency of the more common diseases in the different decades Disease of the circulatory system and nephritis increase steadily in frequency with the age up to the seventh decade Tuberculosis is pretty evenly distributed throughout the whole series Syphilis plays a proportionately greater part as a diagnosis between the ages of 30 and 50 than at other ages, and the same can be said of ulcer All the cases of diabetes and pernicious anemia are found in the sixth and seventh decades A rather remarkable fact demonstrated is that the younger patients are much less liable than the older ones to return a sufficient number of times to permit of a diagnosis being made

TABLE 1—FREQUENCY OF DISEASES BY DECADES

	Decade							
	10 20	20 30	30 40	40 50	50 60	60 70	70 80	80 90
Number of cases	22	78	81	66	54	36	8	3
Percentages								
Heart		7	9	13	25	41	37	33
Tuberculosis of lung	9	11	9	12	11	8	12	
Syphilis		2	8	9	5	2		
Arthritis	13	3	8	12	9	13	25	
Nephritis		2	6	4	9	11	25	
Ulcer of stomach and duodenum		3	6	7	3	2		
Prostatitis and urethritis		3	4	1	3			
Thyroid	4	6	2	6	7			
Appendicitis		2	1	3	3	5		
Diabetes					11	11		
Carcinoma				3	3	2		
Pernicious anemia					3	2		
Cholecystitis	4	2	1	4				
Visits insufficient for diagnosis	27	17	9	9	5			



Percentage of attendance by decades the ordinates represent the percentage of patients, the abscissas the decades The second and third decades show a larger percentage of patients than any of the others

2 *Sex* — There were 192, or 55 per cent, of male, and 156, or 45 per cent, of female patients

3 *Number of Visits Necessary for Diagnosis* —An outpatient department is in the position of having to do a large amount of work speedily, but above all accurately Because of reasons already mentioned, time is an important consideration to these patients, and, so far as possible, the aim should be to come to some definite conclusion as to the cause of the patient's symptoms with the minimum number of visits If the cases are grouped according to the number of visits necessary for diagnosis, the results given in Table 2 are obtained

The number of visits required proportionately by each of the more frequent diseases is given in Table 3 Eighty-four per cent of the cases of tuberculosis of the lungs were diagnosed in three visits, a fairly good result considering the difficulty of determining whether a lesion in the lung is or has been tuberculous and whether it is or is not active That so large a number should have had to come more than twice is due to the repeating of sputum examinations which proved negative on the first search for tubercle bacilli The advisability of thus repeating the sputum examination is questionable, and the examiner would probably do better to rely on his history and physical findings, having only one sputum examination to aid his clinical judgment Disease of the heart or vessels was generally easily determined, the question here being just what part the kidneys played in the clinical picture In many of these cases the phenolsulphonephthalein test was performed, this necessitating an extra visit As will be shown later, this test is of doubtful benefit in the type of cases seen oftenest in the outpatient departments, and the extra visit which it requires might well be saved by its omission Thyroid dystrophy, diabetes, appendicitis, syphilis and bronchitis were practically all diagnosed in two visits Nephritis required usually two or three Eliminating the phenolsulphonephthalein test here, too, would reduce the number of visits made by these patients by 40 per cent Ulcer cases in which test meals and roentgenograms were taken as a routine required three or four visits, and this number does not seem too high when the amount of work necessary is considered It seems possible, then, to reach in two visits a conclusion as to the cause of the patient's symptoms, in the commoner diseases, excluding, of course, ulcer

4 *Visits After Diagnosis*—Of the whole number, 133, or 38 per cent, returned after a diagnosis had been made It is not possible to determine from the records just what percentage lived outside of this city, but the impression is left that a definite number come from the country to the clinics merely for diagnosis and form a part of the 62 per cent who never return Another part is formed by those who are reassured when informed of the triviality of their complaint Others fail to return after they have established the nature of their ailment because we can give them practically no assurance of any considerable benefit that will result Much of the patient's attitude toward his disease is reflected from that of his physician If the latter is hopeful of improvement, the patient will be correspondingly so The introduction of the principle of focal infection has marked a great advance in therapy in that improvement may be looked for in cases which heretofore have been treated only symptomatically Many patients who are instructed to return from time to time but fail to do so could be brought back to the clinic by a follow-up system

TABLE 2—NUMBER OF VISITS NECESSARY FOR DIAGNOSIS

Visit at Which Diagnosis Was Made	Number	Percentage of the Whole
First	9[illegible]	27
Second	82	24
Third	4[illegible]	12
Fourth	20	5
Fifth or later	13	3

5 *Visits Insufficient for Diagnosis* —Forty-one patients, or 11 per cent of the whole number, did not make a sufficient number of visits to justify making

a diagnosis This means a large loss of time and efficiency, part of which could be avoided A certain portion of the responsibility for this falls on the physician either because he is unable to form a judgment as to the cause of the complaint or because he does not impress the patient with his ability to do so A larger share, however, must rest with patients who, after taking whatever time is necesary for a preliminary examination, fail to return for completion of the work Many of these people could be eliminated by the institution of an examining department to which the patient would be referred immediately after registration Here a brief survey could be made without writing elaborate records, and, if the complaint did not merit further attention, the patient could be dismissed at once This would sift out the greater part of the class who do not return a sufficient number of times for diagnosis, and at least assure that the more important cases received the proper time and attention

6 *Diagnosis Made*—A diagnosis was not found on sixty-eight, or 19 per cent of the cards Subtracting the number of patients who did not come sufficiently often to establish a diagnosis, there remain twenty-seven cases, or 7 per cent of the whole number, in which a definite opinion could not be reached

7 *Roentgen-Ray Examinations*—Roentgenograms were made for eighty-four, or 24 per cent, of the patients They play by far the largest part in the diagnosis of gastro-intestinal conditions, but large numbers have been taken to show joint lesions and in search for alveolar abscesses In fifty-six cases, or 66 per cent, of those who had roentgenograms, the plates or screen examinations showed a pathologic process The remaining plates were negative except so far as they helped to rule out certain conditions

8 *Von Pirquet Tests*—Tuberculin skin tests were done quite frequently in the first half of the series, and then almost completely abandoned Altogether the test was performed on twenty-six patients, or 7 per cent of the whole number Table 4 shows the results

In three cases the results are not recorded or the patients failed to return for a reading of the test It would seem that the von Pirquet test as done in this small series of cases was of no value except when negative

TABLE 3—PROPORTIONATE NUMBER OF VISITS REQUIRED

Disease	No	Number of Visits for Diagnosis				
		1 per Cent	2 per Cent	3 per Cent	4 per Cent	4+ per Cent
Tuberculosis of lungs	41	34	29	21	7	7
Circulatory system	50	50	34	12	4	
Arthritis	29	55	34	10		
Thyroid	13	61	38			
Diabetes	9	77	22			
Appendicitis	6	100				
Syphilis	16	31	68			
Bronchitis	7	57	42			
Nephritis	20	10	40	40		10
Ulcer	14		21	42	28	7

9 *Laboratory Tests* — (*a*) Sputum examinations were made for thirty-six patients, or 10 per cent of the whole series In some cases the examination was repeated two or three times Tubercle bacilli were found only five times, influenza bacilli once Thus there were about 83 per cent of negative examinations, and in three cases the specimens were from patients with very evidently active tuberculosis The diagnosis of active tuberculosis was made in twelve cases without sputum examinations, sometimes because there was no expectoration, and sometimes because it was considered desirable to place the patient in the tuberculosis clinic at the earliest possible moment Generally it would seem best to make only one examination of the sputum

(*b*) Stool examinations were made for forty-eight patients, or 13 per cent of the whole Pathogenic amebas were found three times, *Taenia uncinaria* and *Trichomonas* each once Occult blood was found in ten cases Five of these were ulcer, three were carcinoma, in one the diagnosis was doubtful, and in another the test showed the merest trace The presence of occult blood in the stools while the patient was on a meat-free diet seems to have had great significance in this small series of cases

TABLE 4—RESULTS OF VON PIRQUET TESTS

Von Pirquet Test	Final Diagnosis		
	Process Active	Process Arrested	No Tuberculosis
Slight	1	2	4
Moderate	4	0	3
Marked	1	2	2
Negative	0	0	4

(*c*) Blood examinations were made in thirty-two, or 9 per cent of the total number Among the patients on whom complete blood counts were made there were three cases of pernicious anemia, one case of chlorosis, one case of hemolytic icterus, and five cases of secondary anemia due, respectively, to uncinariasis, chronic tonsillitis, carcinoma of the pancreas, menorrhagia and Hodgkin's disease Plasmodia were found twice In all, about 31 per cent of the blood examinations were negative in spite of the fact that the counts were made by the examining physician himself

(*d*) The phenolsulphonephthalein test for kidney function was done twenty-six times, or in 7 per cent of the cases The time required by it can be ill afforded unless it gives definite and decisive information It was used rather frequently during the first half of the series, and then given up almost entirely because it was felt that the results did not justify the expenditure of time Although there were fourteen cases with a blood pressure of 160 or higher, and eleven of these had albumin in the urine, there was only one patient with hypertension who had a phenolsulphonephthalein excretion of under 50 per cent in two hours We must suppose that some of these cases had a certain amount of kidney damage, but the phenolsulphonephthalein test does not enable us to distinguish the mild nephritides from the simple hypertensions, at least not as demonstrated in this small series

(*e*) Test meals were given in fifty-five cases, or in 15 per cent of the whole number of patients Except for ten cases in which the fractional method was used, the Ewald meal was employed as a routine and the stomach emptied in three quarters of an hour On a number of the histories the data obtained are absent in part so that there remain but twenty-two cases in which the full results were satisfactorily recorded Ten of these had a content of 100 c c or over, and among the ten there were six cases of ulcer, one case of pyloric stenosis, probably from an old ulcer, one case of perigastric adhesions, and one case with frequent blood in the stools and much nausea but a negative Roentgen-ray examination Seventy per cent of the patients in the series with an abnormally high content were ulcer cases, 60 per cent complained of vomiting, and 30 per cent showed a residue in six hours by the Roentgen-ray examination Twelve patients had a content of less than 100 c c Twenty-five per cent of these were ulcer cases, 25 per cent complained of vomiting, and none showed a six-hour residue by the Roentgen-ray examination Of those that vomited, two were not stomach cases Thus a stomach content of 100 c c or more in these patients was frequently accompanied by ulcer and by a history of vomiting, and the Roentgen ray often confirmed the delay in the passage of the stomach content to the duodenum On the other hand, a content of less than 100 c c was infrequently accompanied by ulcer, and when there was a history of vomiting it was more often due to gallbladder or perigastric disease The fractional method did not give results that justified the large expenditure of time

(*f*) The Wassermann test was made on 169 patients, or 48 per cent of the whole number Syphilis was diagnosticated in twenty-one, or 6 per cent of the cases, six times when the test was negative Among the fifteen who had a positive Wassermann test, eleven, or 73 per cent, showed signs that suggested syphilis at once and four, or 26 per cent, though they did not show these signs, gave a history of a genital sore which would have led to a Wassermann test These figures suggest that syphilis is discoverable in the history or in the physical examination in the vast majority of cases Eighty-seven per cent of the patients whose blood was tested had a negative report and did not present enough evidence to diagnosticate syphilis, though a certain number gave a history of a soft sore or had an enlarged spleen or fundus changes The conclusion is evident that the complement fixation test was used in a great many cases for insufficient cause

10 Twenty-nine, or 8 per cent, of the patients in this series were referred to the hospital for investigation or treatment Twenty-two, or 74 per cent of those admitted, were given an admission diagnosis which was corroborated or not made more definite in the hospital The efficiency of the outpatient department, then, as regards cases which could be more fully investigated was roughly 75 per cent

11 One hundred and ten, or 31 per cent, of the patients were referred to other departments of the outpatient department for examination and advice A few of these cases were frankly not medical, but most of the number had been properly sent to the medical department for examination Sending these patients for consultation is a very time consuming procedure, for it usually means that the patient is obliged to spend another morning to get the opinion of the department to which he is referred, and still another to report to the medical department again This can be avoided by equipping the medical department so that the ordinary pelvic, prostatic, ophthalmoscopic and orthopedic examinations may be made without referring the patient to another department In the greater number of cases the opinions thus obtained are sufficient for diagnosis and the patient can later be referred to the proper department for treatment when this is necessary

12 It is found very difficult to obtain from records any definite idea of just what benefit, if any, is experienced by the patients An examination of the 348 records shows that 130 have had some benefit from their treatment but that the remaining 218, or 62 per cent, cannot be said to have profited from their visits to the clinic This number, of course, is largely made up of patients who failed to return a sufficient number of times for diagnosis, of those who for some reason could not return, of those suffering from conditions which by their nature were not liable to improvement or even to alleviation, and finally of those who unfortunately were incorrectly diagnosed It is possible that early and thorough treatment of gonorrhea, prolonged treatment of syphilis, proper oral hygiene, and care of necrotic teeth will prevent the development of many cases of chronic arthritis, endocarditis and nervous and circulatory disease, so that in the next ten or twenty years the number of patients benefited will increase The fact remains that 62 per cent of the patients in this series failed to show any improvement

13 In order to get an idea of the hold that the clinics have on the patients, the total period of time that they visited the department was noted It was found that only sixty-one, or 17 per cent, returned after three months, in spite of the fact that they are urged to return from time to time for advice or further treatment, and that the ones who did return after this period were usually those on whom the examining physician had more or less of a personal hold The speed with which the case was handled was also a factor

CONCLUSIONS

It is obvious from an examination of the preceding figures that the number of cases is too small to determine the value of the different laboratory procedures They are merely suggestive and might form the basis of future investigation in which a larger number of cases could be considered with these points in mind Certain facts are brought out, however, and the following conclusions seem justified

1 Thirty-eight per cent of the patients failed to return after diagnosis The introduction of a follow-up system would decrease this percentage

2 Eleven per cent of the patients did not return a sufficient number of times to justify making a diagnosis The institution of a department for preliminary examination of the patients is suggested in order to assign the cases to the proper departments and to eliminate those who come for trivial causes

3 There were twenty-seven cases, or 7 per cent, of the whole number, in which it was not found possible to make a definite diagnosis

4 Seventy-five per cent of the patients sent to the hospital for further examination or treatment had a correct admission diagnosis

5 Much of the time lost in referring patients to other clinics for consultation might be saved by equipping the medical department for the commoner special examinations

6 Only 38 per cent of the patients in this series were benefited by their visits to the clinics

7 Eighty-three per cent of the patients did not return to the clinics after three months

I feel that those who have taken an interested part in outpatient work will agree that there is here the same need for careful attention to detail and effectiveness as in hospital work, but that this is rarely given The figures show that this work, when considered from the point of view of the end-results, is disappointing, and they are given with the hope of stimulating interest in outpatient work and raising its standard

240 Stockton Street

IMMUNITY CONFERRED BY THE TRANSFER OF IMMUNE AND OF MIXED IMMUNE AND SENSITIZED SERUMS*

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We venture to present a few facts on an intricate subject, conscious that their full meaning and value must await the verdict of prolonged research

In a recent investigation by two of us[1] it was found that when horse serum was dropped into the nose of a guinea-pig on alternate days, as few as four times, the animal became biologically modified in one of two opposite directions A "toxic" injection of a large dose of serum given by the vein sixteen days after the last instillation could strongly shock or kill the guinea-pig That is, the animal had become "sensitized" to the horse serum absorbed through the mucous membrane of the nose as if it had been given by subcutaneous injection In certain animals, however, the toxic injection of horse serum not only did not kill, but produced scarcely noticeable symptoms of reaction

Such a result would be attributed to incomplete absorption of the antigen were it not that a second large intravenous injection of serum, given two weeks after the first, was likewise frequently withstood

In the work referred to it was found that the quality of the effect depended on the quantity of the serum instilled A dosage of 0 2 c c of horse serum generally produced fatal anaphylaxis, while a dose of 0 04 c c commonly conferred tolerance

We could explain our results only on the hypothesis that the absorption of horse serum, according to dosage, initiated in the guinea-pig two opposite reactions, one of which was manifested by the anaphylactic state and the other by a condition of primary increased tolerance for the antigen We further found that guinea-pigs prepared by a course of nasal instillations of serum, as compared with animals prepared by massive intraperitoneal injections, responded differently to a series of intravenous injections of horse serum Animals given the preliminary treatments by the parenteral route, as is well known, tolerate continuously increased amounts of serum in spaced intravenous injections, but if a long resting period, say upward of 100 days, intervenes, there is more or less pronounced return toward hypersensitiveness

When, on the contrary, guinea-pigs prepared by the nasal instillation of serum are submitted to a similar course of intravenous injections, tolerance for the antigen apparently increases with the length of the resting period, at least during the lapse of 125 days

One of the fundamental data of immunology is the presence in the blood of an animal sensitized to a foreign serum of an anaphylactic antibody When the serum of an animal sensitized to horse serum is injected into the peritoneal cavity of a normal guinea-pig, this creature itself passively acquires hypersensitiveness to horse serum

In the present work we undertook to solve the following apparently simple problem Given two guinea-pigs, one of which is hypersensitive to horse serum and the other resistant to it, does the serum of the latter animal contain anything which may neutralize or modify the admitted anaphylactic effects induced by the serum of the hypersensitive animal? An affirmative result would suggest the hypothesis of an "immune body" functionally opposite in action to that concerned in anaphylactic reactions

The meager results thus far obtained are presented now only because it has become necessary to postpone indefinitely continuation of the work This survey has employed seventy-two animals in twelve series of experiments The crucial purpose of each group of experiments was to obtain the blood serum of two guinea-pigs, one of which was highly resistant and the other highly sensitive to the intravenous injection of horse serum The donor pigs were bled directly into tubes in which the serum was separated by centrifugation within half an hour The serums from the two animals were injected at once, separately and mixed in various proportions, into the peritoneal cavities of normal guinea-pigs having an average weight of 300 gm The mixed serums were incubated together for from fifteen to forty minutes, either at room temperature or at 37 C (98 6 F) before injection After a resting period of from two to three days, these pigs received an intravenous injection of 0 25 c c of horse serum and, in case of survival, the injection was repeated at intervals of fourteen days or more

Our usual method of procedure was to inject 3 c c of the serum from sensitive and resistant animals, respectively, into two normal guinea-pigs, and then mixtures of serums in the proportions 3 + 1, 1 + 3 and 1 + 1 into other normal animals Our first technical difficulty was encountered in the preparation of animals with such a high blood content of anaphylactic antibody that a normal pig receiving 3 c c of the serum would succumb in forty-eight hours to the intravenous injection of 0 25 c c of horse serum In most cases the recipient pig was only shocked with the first intravenous injection, succumbing to the second The usual preparatory treatment of pigs designed to develop anaphylactic antibodies consisted in from three to four daily intraperitoneal injections of from 2 to 5 c c of horse serum, the pigs being bled from fourteen to forty-eight days later

It is obvious that the degree of sensitization acquired by the normal pigs, as a result of the intraperitoneal injection of sensitized serum, would be manifested as an anaphylactic response to the first intravenous injection of horse serum

Eight of the forty-six normal animals receiving the serum of treated pigs died with the first intravenous injection of horse serum Three showed no definite reaction, one of these succumbing to the second intravenous injection The remainder showed a varying degree of reaction

It is further obvious that the first intravenous injection of 0 25 c c of horse serum would, under ordinary conditions, strongly sensitize the guinea-pigs so that they would invariably succumb to a second injection of a like amount repeated after fourteen days or longer

Our experiments show, however, that eleven of the forty-six pigs receiving serum of the treated animals withstood the second intravenous injection, and seven withstood three or more such injections, none of these, in fact, dying under treatment The guinea-pigs used as donors of serum may be divided into two general classes Those of the first class had been treated by the instillation of horse serum into the nose, but did not receive thereafter the usual intravenous injection of this serum Half of these animals were instilled with what we call "protective" doses of 0 04 c c of horse serum, and half with "sensitizing" doses of 0 2 c c of the serum From the results of parallel experiments it was assumed that the animals instilled with the smaller dosage would have withstood an intravenous injection of 0 25 c c of horse serum in sixteen days, and that those instilled with the larger dosage would have succumbed to such an injection More ample experience has shown that this sharp biologic distinction between animals according to the amount of antigen which they have received cannot always be predicated, nevertheless it is obvious that remarkable and specific properties may be acquired by the serum of guinea-pigs treated only by instillation of horse serum, without subsequent reinforcement with intravenous injection This is shown in Table 1

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* Read before the Section on Practice of Medicine at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Sewall Henry and Powell Cuthbert On the Conditions and Characters of the Immunity Produced in Guinea Pigs by Instillation of Horse Serum into the Nose Jour Exper Med 1916 xxiv No 1

The letter L in the table signifies that the guinea-pig survived its intravenous injection with scarcely perceptible reaction, the number of + signs indicates degrees in severity of anaphylactic shock

It will be seen in the third column that every pig was to a degree sensitized by the intraperitoneal injection of serum from the donor animals In the fourth column we see that pigs Nos 5 and 6, which had received mixtures of serum from donors A and B (the mixtures having stood at room temperature for about thirteen minutes) survived the second intravenous injection, and repetitions of the same at various intervals and with increasing dosage

We defer speculation as to the meaning of these facts until the general discussion at the close of this article Suffice it now to postulate that the recipient Guinea-Pigs 5 and 6 have acquired an active immunity One hundred and nineteen days elapsed between the intraperitoneal injection of immune serum and the last intravenous injection of horse serum During this time six injections of horse serum were given and, in spite of the increase in the amount of antigen, the immunity of the pigs was progressively strengthened after the third treatment

TABLE 1—EXPERIMENTS WITH SERUM OF GUINEA PIGS TREATED ONLY BY INSTILLATION OF HORSE SERUM

Donor Pigs†	Normal Pigs	Serum Intraperitoneally, C c	Results of Intravenous Injection of Horse Serum*					
			0 25 C c				0 38 C c	
			First, 48 Hrs After Intraperitoneal	Second, 15 Days After First Intravenous	Third, 14 Days After Second Intravenous	Fourth, 17 Days After Third Intravenous	Fifth 12 Days After Fourth Intravenous	Sixth 59 Days After Fifth Intravenous
A	1	0 75	L	D				
A	2	4	L ++	D				
B	3	0 5	L +	D				
B	4	3 25	L +++	D				
A & B	5	A 0 75 B, 2	L +	L +++	++++	L +++	L +	L +
A & B	6	A 2 B, 0 5	L +	L +++	L +++	L +	L	L

* In this and the following tables, D means "dies" L means "lives after very slight reaction", L ++++ means 'very severe reaction'

† Preparation of donor pigs A, immune, received six nasal instillations of 0 04 c c horse serum alternate days B, sensitive, like treatment with 0 2 c c horse serum Both bled after 21 days

In numerous experiments which we have performed on pigs born of immune and sensitive mothers, never have we seen one survive the second intravenous injection of horse serum It might be maintained, of course, that our Pigs 5 and 6 acquired their active immunity from the small residue of horse serum remaining free in the circulation of the donors A and B, but, as will be seen shortly, such an explanation is scarcely tenable Nevertheless, this interpretation of the results is perhaps supported by the data conveyed in Table 2

In this experiment both donor pigs were highly *immunized against horse serum* After *six nasal* instillations of 0 04 c c of horse serum, each withstood, with scarcely perceptible reaction, the intravenous injection of 0 38 c c of horse serum after sixteen days Sixteen days later a similar injection was borne with moderate reaction Sixty-seven days later A reacted moderately to an intravenous injection of horse serum increased to 0 75 c c, and in sixty-nine days B responded in the same way to an intravenous injection of 0 88 c c of horse serum These pigs were bled at the same time, A nineteen days after receiving 0 75 c c of horse serum, and B seventeen days after receiving 0 88 c c of the serum It is seen that the normal recipient of B's serum died with the first intravenous injection, while the other two recipients were immunized The mixed serums of A and B were incubated at 37 C for twelve minutes

TABLE 2—EXPERIMENTS WITH SERUM OF GUINEA PIGS HIGHLY IMMUNIZED AGAINST HORSE SERUM

Donor Pigs*	Normal Pigs	Serum Intraperitoneally, C c	Results of Intravenous Injections of 0 25 C c Horse Serum			
			First, 47 Hours After Intraperitoneal	Second, 19 Days After First Intravenous	Third, 16 Days After Second Intravenous	Fourth, 45 Days After Third Intravenous
A	1	3	L	L	L +	L ++
B	2	3	D			
A & B	3	A 1 B, 1	L	L ++	L +++	L ++

* *Donor pigs treated by a course of nasal instillations and later by* intravenous injections of horse serum A was bled 19 days after last intravenous of 0 75 c c horse serum B was bled 17 days after intravenous of 0 88 c c horse serum

It is worth while noting that the immunity conferred on normal guinea-pigs by this method usually develops more slowly and less perfectly than in animals immunized after a course of nasal instillations of horse serum[2]

Our experiments substantiate the opinion that the effect of serum transferred by intraperitoneal injection to a normal animal depends not only on its composition but also on the quantity injected and, when mixtures of the serum are used, on the relative amounts of "immune" and "sensitive" serum employed

Our experiments are far too limited in number to establish the quantitative relations of the variables in this supremely practical problem Nevertheless, certain conclusions seem to be indicated, thus mixtures of immune and sensitive serums appear to be more potent to confer immunity on the normal guinea-pig than immune serum alone, and those mixtures which contain the smaller proportion of immune serum are apparently most effective in this direction

Mixtures of the serum of two hypersensitive donors, on the other hand, appear to be quantitatively more potent to induce the anaphylactic state in normal pigs than either serum alone

In Table 3 the results of three series of experiments are condensed In the first, the immune Pig A, after a course of nasal instillations with horse serum, had received at long intervals five intravenous injections of horse serum, the last, amounting to 0 75 c c, being given 116 days before the pig was bled The animal was a female, and offspring born to it late in the treatment were completely refractory to subcutaneous injection of 0 1 c c of horse serum, while offspring of a sensitive mother succumbed to such an injection Pig B was bled twenty-five days after its course of intraperitoneal injections, its serum, no doubt would have been richer in anaphylactic antibodies had a longer interval elapsed It is noticed that a stronger protection is afforded by the serum mixture containing the smaller amount of "immune" serum A The same result is noted in Pig 4 of the third experiment In the second experiment 3 c c of the serum of the sensitive Pig D contained enough anaphylactic antibodies to make the normal Pig 2 fatally sensitive to an intravenous injection of horse serum Although the serum of the immune Pig C was rich enough in protective substance to protect Pig 1 against a series of intravenous injections of horse serum, it could only partly inhibit the fatal effect of the serum of D when mixed with it

TABLE 3—RESULTS OF THREE SERIES OF EXPERIMENTS

Donor Pigs	Normal Pig	Mixed Serum Intraperitoneally Cc	Results of Intravenous Injections of 0 25 Cc Horse Serum: First 62 Hours After Intraperitoneal	Second 14 Days After First Intravenous	Third 13 Days After Second Intravenous	Fourth 14 Days After Third Intravenous	Fifth 33 Days After Fourth Intravenous
A & B	1	A 2 5 B 1 5	L +	D			
A & B	2	A 1 5 B 2 5	L ++	L +++	L +++	L +	L
		Separate and Mixed Serums	First 37 Hours After Intraperitoneal	Second 15 Days After First Intravenous	Third 13 Days After Second Intravenous	Fourth 36 Days After Third Intravenous	
C	1	3	L	L ++	L +	L	
D	2	3	D				
C & D	3	C 3 D 1	L +	D			
C & D	4	C 1 D 3	L ++	D			
		Separate and Mixed Serums	First 37 Hours After Intraperitoneal	Second 14 Days After First Intravenous	Third 42 Days After Second Intravenous		
E	1	5	L +	L +++	D		
F	2	2	L ++	D	-		
E & F	3	E 2 F 2	L +	L ++	D *		
E & F	4	E 1 F 2	L +	L ++	L +++		

* Preparation of donor pigs A immune pig 6 nasal instillations 0 2 c c horse serum followed by 5 intravenous injections in 45 months last intravenous of 0 75 c c. horse serum given 116 days before bleeding B sensitized pig 4 intraperitoneal injections of from 2 to 5 c c horse serum daily bled 25 days after last intraperitoneal C immune pig 4 nasal instillations of 0 2 c c horse serum followed by 3 intravenous injections of horse serum in 51 days last intravenous of 0 5 c c horse serum given 103 days before bleeding D sensitized pig prepared like B but bled 41 days after last intraperitoneal E immune pig prepared by 12 daily instillations of 0 02 c c horse serum followed by 2 intravenous injections of horse serum within 3 weeks last intravenous of 0 35 c c horse serum 107 days before bleeding F sensitized pig three intraperitoneal injections of horse serum from 1 to 4 c c daily bled 17 days after last intraperitoneal

After it had been determined that immune serum and mixtures of immune and sensitized serum inoculated into normal guinea-pigs could protect them against anaphylactic death following intravenous injection of the antigen, it was obviously desirable to determine whether animals already hypersensitive to horse serum could be desensitized by similar treatment A considerable number of experiments were performed in which guinea-pigs, sensitized to horse serum by subcutaneous injection, were given intraperitoneal injections of from 3 to 5 c c or more of serum and its mixtures, which probably would have protected normal animals against anaphylaxis Each recipient pig was treated by an intravenous injection of horse serum in from three to seven days after the intraperitoneal injection, and each promptly died We conclude that *prophylaxis* and *cure* of sensitization are practically independent problems A useful discussion of the essential differences between prophylactic and therapeutic vaccination has been given by Theobald Smith [2]

COMMENTS

The present work must be considered in the light of facts announced in the previous article,[1] of which it is a continuation

We are strengthened in the opinion expressed a year ago[3] that two different reaction bodies are formed in a normal animal when a foreign protein is introduced into its circulation One of these is the anaphylactic antibody familiar to literature The other is a protective antibody which averts the changes which result in anaphylactic shock These antibodies probably always exist together in the circulation but, according to circumstances, in very different proportion In the donor pigs which we have termed "sensitive" the anaphylactic antibody greatly predominates, while in the "immune" pigs the protective antibody is more or less pure It is characteristic of the metabolism set up by the repeated absorption of very small quantities of horse serum by the nose that it results in the preponderant formation of the protective antibody In an important research by Gurd,[4] conclusions are expressed which agree, in parts, exactly with our own

> The experiments are interpreted by the author as proving the presence in the circulating blood of immune animals, of bodies which are potent to induce the hypersensitive state when introduced into normal animals and also of bodies which if injected in sufficient quantities are able to render normal animals immune

We have shown that our "immune" serum that presumably surcharged with protective antibodies, is alone capable of protecting normal guinea-pigs against a series of inoculations of horse serum, and that mixtures of "immune" and anaphylactic serums appear to be still more potent in this direction

Considerable evidence has been developed, both from laboratory and clinical fields, which supports the view that a disease-producing organism or substance when combined with certain contents of immune serum has a peculiarly vaccinating or even curative effect [5] Theobald Smith[6] seven years ago suggested the employment of mixtures of toxin-antitoxin in the prophylaxis of diphtheria The more recent use of "sensitized" vaccines is evidently founded on the same principle

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[2] Smith Theobald Boston Med and Surg Jour 1910 clxiii 275

[3] Sewall Henry and Powell Cuthbert Studies on the Relations of the Hypersusceptibility and Insusceptibility Induced in Guinea Pigs by the Instillation of Horse Serum into the Nose Arch Int Med October 1915 p 605

[4] Gurd F B Jour Med Research 1914 xxxi 205

[5] Wood F C in Forchheimer's Therapeusis of Internal Diseases 1914 i 125

[6] Smith Theobald Jour Exper Med 1909 xi 241

A rich experience has been accumulated by students of hog cholera.[7] Prophylaxis against this disease may be secured by the subcutaneous inoculation of normal animals with "hyperimmune" serum, that is, serum from immune hogs that have withstood inoculation with actively infected blood. This treatment is not curative of the disease, and its protective power disappears after a few weeks. Prophylaxis by the "simultaneous" method is much more effective. According to this plan, a considerable quantity of hyperimmune serum is injected under the skin on one side of the animal, and a small amount of virulent blood is injected on the other side. The protection conferred is said to last throughout life, and hogs actually sick with the disease are cured in a considerable proportion of cases. Duval and Couret[8] have recently reported highly successful vaccination with "desiccated, sensitized hog cholera virus." They incubate the diseased tissues with hyperimmune serum, then dry and reduce them to a powder which is found effective for prophylaxis in exceedingly small amounts.

We venture to offer the following explanation of the facts presented: The protective antibodies of our immune pigs when injected into normal animals combine with cells and initiate in them the tendency to produce similar antibodies under appropriate stimulation. Such stimulation is found in the antigen contained in horse serum. The result of such injection is a response of the body cells by which they produce such excess of protective over anaphylactic antibodies that repeated injections of horse serum are withstood. The evidence is that the effect of the protective antibody in directing the tissue metabolism is greatly enhanced by the presence in certain proportion of anaphylactic antibodies as found in the mixed serums. This is seen in Table I. The rôle, then, of these reaction bodies injected into the normal animal is to modify cellular irritability in a manner to lead to the speedy and preponderant formation of "protective" antibodies under the stimulus of the antigen, and thus initiate the course of active immunity. The final status of the irritability of a living cell is determined, not only by the kind and amount of stimulating material invading it, but also by the metabolic predisposition of the cell at the moment of contact.

SUMMARY AND CONCLUSION

Our work was undertaken with the design of discovering whether the blood serum of guinea-pigs rendered immune to considerable intravenous injections of horse serum by a preceding course of nasal instillation of the serum has a different biologic effect from the serum of highly sensitive animals, when injected intraperitoneally into normal guinea-pigs. We have found that the serum of animals which we call immune can confer on normal guinea-pigs a resistance against a long succession of intravenous injections of the same antigen. It is also probable that mixtures of immune and sensitive serums in certain proportions give still greater protective effects. Notwithstanding the numerical inadequacy of these experiments, we believe that, taken in connection with the broader research,[1] they justify the following tentative conclusion: A foreign protein injected into a normal animal sets up reactive processes leading to the formation, in this field, of two antibodies having opposite characters; one tends to induce, and the other to avert, the establishment of the anaphylactic state.

Serum containing an excess of the anaphylactic antibody, when transferred to normal animals, renders them, as is well known, passively anaphylactic. Serum containing a sufficient excess of the "protective" antibody, when transferred to normal animals, initiates in them the phenomena of active immunity. Mixtures of the two types of serum seem still more effective in conferring immunity.

The metabolism of the body cells is specifically modified by combination with these antibodies in such a way as to give rise to hypersensitization on the one hand or to active immunity on the other.

If our interpretation of these results is correct, it is evident that new definitions must be given for "immune" serums.

ABSTRACT OF DISCUSSION

DR. F. G. NOVY, *Ann Arbor, Mich.*: Dr. Sewall in his results on the treatment of anaphylactic shock has described a protective action. It seems to me immunity begins with the shock itself. As to the nature of anaphylaxis: We have been accustomed to look on the chemical changes in the body as the most important feature. I am certain that it will be found that these changes are purely physical from beginning to end and that there is no chemistry connected with it.

DR. S. J. MELTZER, *New York City*: Dr. Sewall is possibly the first one to test the effect of serum not by its action in anaphylactic shock but by its action when it did not kill and later when it protected. He discovered that when subminimal doses were used it was protective. But all such findings must be confirmed before they can be accepted as facts. It is very important to use the serum in small doses by his method. Nobody will object to the use of serum to protect them from infections or against possible anaphylactic shock. It has been found that guinea-pigs may be made either hypersensitive or insensitive to the action of horse serum following the placing of it in the nose and not in the stomach. It might be a good plan to give it by the stomach if the stomach is not full.

DR. HENRY SEWALL, *Denver*: As to taking the serum by way of the mouth, in a few cases in which I have tried it the results have been negative. The mucous membrane of the mouth absorbs any foreign protein slowly. Again, if it is introduced into the stomach by means of a tube certain errors enter into it and one may lacerate the epithelium.

The Printing Press.—I am the printing press, born of mother earth. My heart is of steel, my limbs are of iron, and my fingers of brass. I sing the songs of the world, the oratorios of history, the symphonies of all time. I am the voice of today, the herald of tomorrow. I weave into the warp of the past the woof of the future. I tell alike the stories of peace and war. I make the human heart beat with passion or tenderness. I stir the pulse of nations, and make brave men do brave deeds, and soldiers die. I inspire the midnight toiler, weary at his loom, to lift his head again and gaze with fearlessness, into the vast beyond, seeking the consolation of a hope eternal. When I speak a myriad of people listen to my voice. The Anglo-Saxon, the Celt, the Hun, the Slav, the Hindu, all comprehend me. I am the tireless clarion of the news. I cry your joys and your sorrows every hour. I fill the dullard's mind with thoughts uplifting. I am light, knowledge, and power. I epitomize the conquests of mind over matter. I am the recorder of all things mankind has achieved. My offspring comes to you in the candle's glow, amid the dim lights of poverty, the splendor of riches, at sunrise at high noon, and in the waning evening. I am the laughter and tears of the world, and I shall never die until all things return to the immutable dust. I am the printing press.—R. H. Davis.

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[7] Dorset, M., McBryde, C. N., and Niles, W. B.: Bull. 102, Bur. An. Ind., U. S. Dept. Agric., 1908. Dorset, M.: Farmers' Bull. 379, U. S. Dept. Agric., 1909.

[8] Duval, C. W., and Couret, M. I.: Read before the Association of American Physicians, May 11, 1910.

SIMPLE TIC MECHANISM *

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While the earlier considerations of tic and allied disorders by descriptive neurologists are pictorial rather than interpretative and reportorial rather than explanatory, the French school of neurology (Brissaud, Meige and Feindle) made a valuable contribution toward the better understanding of the mechanism of the disease when it defined tics as "physiologic acts, originally purposeful but which have become acts apparently purposeless and meaningless" It also emphasized the fact that the mental imperfection of the tiquer is characterized by a mental infantilism, for like most other psychoneurotics, they have the minds of children in regard to their emotional reactions

Thus, although the French investigators more sharply defined and limited our conceptions of tic, recognized them as psychoneurotic manifestations and detailed their manifold types, they failed to explain why the purpose, subsequently lost, originally took the particular form of expression exhibited in the individual tic, why it varied in each case, and more especially, why the purpose originally expressed by the tic had been lost to the patient's consciousness

When the Vienna school began the study of neurotic disorders in a psychanalytic way, the mystery of the tic mechanism naturally attracted much attention, and the general view of the freudian school has thus been summed up by Ernest Jones [1]

> Early in life an exaggerated divorce occurs between the instincts of love and hate, and the conflict between the two dominates the most important reactions of the person The fundamental state of doubt—an incapacity for decision—results The patient oscillates between not being able to act (when he wants to) and being obliged to act (as he does not want to) The tic symptom symbolizes the conflict of opposing forces

L Pierce Clark[2] has further amplified the understanding of tic mechanism with the analysis of three stubborn cases, in which the malady was interpreted to be an autopleasurable act of sex significance (sex being used in the extremely broad sense with which it is invested by the freudian school) Clark in his reports is inclined to emphasize the auto-erotic gratification unconsciously afforded the tiquer by this act rather than to trace the primary conflict through which the tic developed The aspect of the tic as a defense reaction is regarded by him as of secondary importance

If, as Oppenheim[3] states, tics occur most often between the seventh and fifteenth years, and if, as the French school asserts, the tiquer has the emotional attitude of the child, and if, as psychanalysts maintain, the tic of the adult ultimately rests on an unadjusted mental conflict originating early in childhood, it would seem that tics developing in childhood would be more satisfactory to study with a view to determining their original purpose, inasmuch as the purposes of childhood are simpler, more direct and more transparent than those of later years, when primary intentions have become almost unrecognizably altered by the innumerable cross impulses of age

The simple cases of habit spasm which I am reporting show the tic to be essentially a defense reaction elaborated by the censor against a primarily autopleasurable act It constitutes, when regarded as an entity, a compromise, just as most other neurotic symptoms are compromises, to retain and at the same time abandon an act which originally yielded satisfaction but which has become intolerable because it cannot be brought to harmonize with the individual's idea of adult or adolescent propriety

REPORTS OF CASES

Case 1 —Abe C, aged 10, American born of Russian Jewish parentage, came to my clinic at the Mount Sinai Dispensary suffering from an unusual tic At irregular intervals he would flex his left forearm on his slightly abducted and elevated upper arm in a jerky movement and then extend it During the motion the four fingers of his left hand remained tightly clenched, but the thumb of this hand was held rigidly abducted It was also noted that the thumb was reddened and slightly swollen

The mother related the following illuminating history When the child was 1 year old and still suckling at the breast, he contracted diphtheria for which he was sent to the Willard Parker Hospital for Contagious Diseases, where he became infected with the entire category of children's diseases, necessitating a total hospital residence of something over a year

Following the baby's removal from home, breast feeding was supplanted by the bottle and spoon, but the child evidently found an acceptable substitute for the nipple of which he had been deprived, for when he returned home it was observed that he sucked his thumb incessantly As the number of children in the family was large and as the baby seemed content and docile when allowed to indulge in his thumb sucking solace, the mother, satisfied in view of her numberless daily household burdens to let well enough alone, made no determined effort to correct the habit

The censorship of thumb-sucking as being infantile came from another and usually unconsidered source, the child's own playmates The abnormality was so obvious to them that before long they seized on it as a taunt, and whenever he appeared among them they greeted him with the cutting nickname, 'Abie, the sucker"

While not usually so considered, reprimands from our peers are often more effective than those from our superiors and in Abie s case at least there was an attempt to rectify the habit which had drawn so much odious comment on him Thus, when the desire arose to regale himself with his favorite pastime, the censorship immediately originated a counter thought to oppose such an action

The result of this was that the patient started the movement of approximating his extended thumb with a view to inserting it into his mouth but immediately before it reached its goal, he began to withdraw it, with the peculiar tic resulting In his tic he thus attains the psychic equivalent of putting his finger into his mouth and at the same time abstains from doing so

The habit spasm has led to a secondary spinal scoliosis, for the patient had acquired the posture of a mild torticollis through keeping his head tilted slightly downward and to the left where his mouth would be in position to receive the finger were it not prevented by the counter thought from reaching its destination The child is neurotic and fretful but the mother states—and this was verified at the clinic—that both the irritability and the tic cease when he is permitted to isolate himself and insert his thumb in his mouth

The purposes of children in contradistinction to those of later years are transient, unstable readily diverted and easily displaced If a 2-year old reaches for cake, the guardian resorts to some such expedient as dangling another object before its eye and the purpose of obtaining cake is temporarily displaced by a desire to grasp the new object

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* Presented before the New York Neurological Society April 4 1916

[1] Jones Ernest in White and Jelliffe Treatment of Mental and Nervous Disease 1 409

[2] Clark L Pierce Mental Torticollis as a Psycho-Neurosis Med Rec New York Feb 28 1914

[3] Oppenheim Nervenkrankheiten Ed 5 ii 1448

So, too, the tics of childhood, representing purposes as they do (that is, compromise defense reactions of the simplest types) are transitory Like many other ailments, unless the physician acts quickly enough, children's tics may have a disconcerting way of vanishing without the aid of recognized therapeutic measures

This patient's tic, although studied, was certainly not cured by me Little Abie's father has relieved the habit spasm by substituting another source of pleasure which is to a large measure replacing his own auto-erotic pleasure His method, simple enough, consisted in the weekly administration of 10 cents if the child refrains While superficially the therapeutic effect is striking, naturally the underlying neurotic constitution of the child has not been improved, and it would not surprise me in the least to learn that Abie invests his 10 cents in long sucking stick candy

Case 2—A woman, aged 34, under analysis for a depressive hallucinosis, was remarked to dig her left forefinger repeatedly into the hollow of her cheek She explained that she often unconsciously did this when under stress and always before going to sleep at night During the course of the analysis its significance became clear

As a little girl she constantly sucked her left index finger and continued to up to the age of 8, when her father undertook to break her of the habit by employing the usual punishments, corporeal and psychic When about 12 years old, she was stricken with a severe febrile disease, which was accompanied by distressing unrest and insomnia When the family physician complained of the inefficacy of his drugs in controlling her excitement, her father suggested that he knew what would quiet her more quickly than any medicine—namely, permission to suck her finger The physician did not disdain to accept the hint, which worked miraculously well

After her convalescence, naturally the habit persisted, and again the father undertook its correction, this time by moral reasoning During the day she successfully combated the practice, but when alone at night an intense desire possessed her to revert to the infantile means of pacification Her compromise resulted in putting her finger to the outside of her cheek instead of inside her mouth, and pressing the finger against the cheek instead of the cheek against the finger Thus she protected herself against violating her father's admonitions and at the same time retained the equivalent of her autopleasurable sensation, in slightly altered form She unconsciously reverts to this ticlike habit at the present time only to induce sleep or when under some particular strain[4]

Case 3—American, aged 29, under analysis for a claustrophobia, exhibited a tic which consisted in turning the head with a sudden jerk to the right The patient explained that whenever he found himself in a mental dilemma, the tic arose as a symbolic act to "shake it off"

The autopleasurable origin of the residual movement could be traced to the common practice of children in the country of rolling down hill, the friction and motion of which is undoubtedly a source of gratification In the case of the patient, even at the age of 8, it was accompanied by a mild sexual erotism when he finally reached the prone position at the end of the rolling, especially when girls mingled with the boys

The pleasure afforded by hill rolling was supplanted at a somewhat later period (from 8 to 10 years) by the practice of standing in the road and whirling oneself rapidly about until the primary exhilarating giddiness gave way to exhaustion and one fell to the ground During this form of amusement, one of his companions, the school dunce, discovered that if the neck were craned upward and the head tossed violently in the opposite direction to the whirling before beginning the act, the effect would be more violent and more rapidly induced Tossing the head thereafter became a regular preliminary to the whirling

Naturally with advancing years the auto-erotic hill rolling and its successor, body whirling, were discontinued by the children, but the patient, whose psychosexual development remained stationary from the age of puberty, lapsed into another form of auto-erotism, masturbation, with which he struggled incessantly until his neurosis (a compromise affair) developed His masturbation and sexual maladjustment constituted his urgent difficulty for fifteen years and perhaps, as the patient says, the turning of the head may be a symbolic movement of shaking off his trouble Possibly there may be some such significance, but it is unquestionable that in attempting to free himself of one auto-erotic habit (masturbation) *he unconsciously resumed* the remnant of another and earlier one

In view of Dr Clark's investigations of habit movements in imbeciles, it is interesting to note that the school dunce, who originated the head turning movement, has since assumed his logical position of the village half-wit, and has retained the habit to such a pathologic extent that he is identified with it

COMMENT

The mechanisms in these cases are so simple that they may seem superficial Infantile acts, however, purposes and counter-purposes, are all such The tics all disappeared, not because of their analysis, but because more vexing problems harassing the patients were solved and the necessity for such supplementary compromise defense reactions no longer existed The cases are reported, then, to illustrate the theory that these tics originally represented purposes, that the purpose had been suppressed, and how the apparently senseless movement, when resumed, constituted a defense compromise which afforded relief to the patient

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[4] The analysis of other features of Case 2 was reported in the Journal of Abnormal Psychology, February, 1912, and of Case 3, in the New York Medical Record, July 5, 1915

THE FATIGUE OF ACCOMMODATION

AS REGISTERED BY THE ERGOGRAPH *

LUCIEN HOWE, MD
BUFFALO

At the session of the American Medical Association in 1912, I had the honor of presenting a paper which dealt especially with the measurement of fatigue of convergence and of divergence as registered by the ergograph In another paper in 1913, at the meeting of the American Ophthalmological Society, a classification was given of the varieties of fatigue of convergence

In this third paper I show that by a similar method the ciliary muscle can also be made to write its story of fatigue The principle involved has now been worked out sufficiently to venture a description of the method, but the subject has proved to be so vast and apparently so important clinically, that the fatigue of accommodation which accompanies forms of ametropia or of heterophoria must be reserved for future consideration

It will add to clearness to give first a simple illustration of what is meant by the fatigue of accommodation, after that to describe the apparatus for measuring this fatigue, and finally to show some tracings made by the ciliary muscle, explaining what they mean

First, to illustrate the principle If a person who is still young enough to exert some accommodation closes one eye and looks with the other at a printed page, he can approach the page at once to a point where the letters are just visible But in a few seconds the effort at accommodation is followed by discomfort and blurring, that is to say, it is impossible to keep up extreme tension of the ciliary muscle, and in order to see the letters at all, it is necessary to push the book back to about its original position

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June, 1916

If the experiment is made repeatedly, at each succeeding trial the letters cannot be seen quite as near to the eye as before, in other words, a certain amount of "fatigue" has developed, and this fatigue increases until no further effort of accommodation is possible

The problem of measuring this fatigue, therefore, resolves itself into three factors

1 We must obtain test letters or other objects for fixation, which we know demand a definite power of accommodation to make them visible at a definite distance

2 A simple apparatus must be constructed which will measure exactly at any time the distance of the letters from the eye

3 Every movement of the letters toward the eye, or away from it, and the time occupied in making that movement, must be accurately recorded Let us consider these desiderata in detail

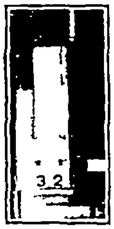

Fig 1 — Series of characters for testing the accommodation at small fractions of a meter The letters actually used are photographed and much more distinct than those shown in the illustration

The letters are obtained by selecting some of the standard types or numbers which we use clinically, and reducing the size by accurate photographic methods, so that they are equally good tests of vision when viewed at a very near point An idea of these letters is given by Figure 1 As ink blurs even the larger letters, they cannot be shown on a printed page, therefore those used in these tests have been photographed, although this is not an easy process

The second desideratum is some arrangement for measuring accurately the distance of the test types, at any time, from the eye This presents some difficulties when exactness is demanded, but they are overcome best by modifying an instrument which I constructed originally to measure relative accommodation, which is, of course, the amount of accommodation which can be exerted or relaxed with relation to a given degree of convergence A description of that "optometer" was in my first volume on the muscles, and is shown in Figure 2

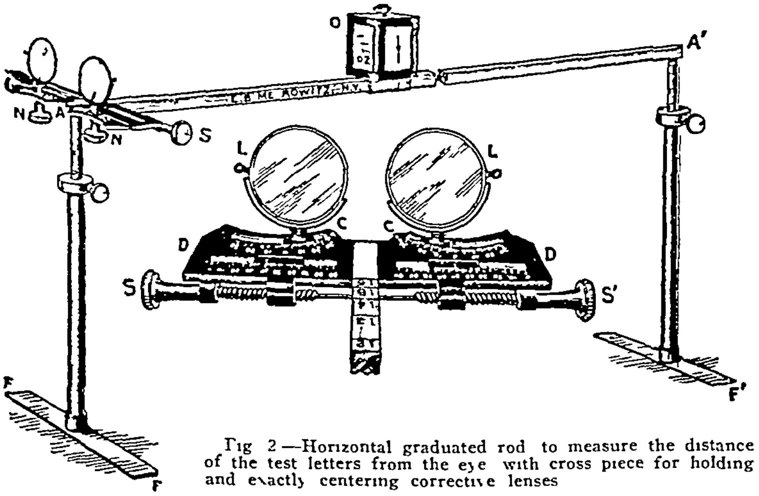

Fig 2 —Horizontal graduated rod to measure the distance of the test letters from the eye with cross piece for holding and exactly centering corrective lenses

It consists essentially of a properly supported horizontal rod *AA'*, which is graduated in fractions of a meter measured from the eye At the proximal end of the horizontal bar there is a cross piece *DD*, with slots for supporting the lens *L* or *L'*, as such a lens is necessary in certain cases to correct any existing ametropia

In order to adapt this instrument to the measurement of fatigue of accommodation, it was only necessary to shorten the horizontal bar and attach to the distal end a small wheel, whose use will be described presently This modification supplies our second desideratum

The third desideratum is some arrangement for recording accurately each motion which the test letters make in approaching the eye, or receding from it, and the time occupied by such motion

Similar records are made in every physiologic laboratory on a drum revolved by clockwork When it was used originally to record blood pressure it was called a kymograph, but when Mosso used it to record the fatigue of a muscle he called it an ergograph

When prisms with bases out were adapted to this instrument, it became a convergence ergograph, or if the prisms were turned with their bases toward the nose it became a divergence ergograph, and so on, these have been described

In order to make this instrument into an accommodation ergograph we must attach near the base of the revolving drum a vertical tube which encloses a brass rod To the lower end of this vertical rod a spring is made fast to assist in drawing the rod down promptly whenever it has been raised and then quickly released From the upper end of the vertical rod an arm extends out toward the revolving drum This arm terminates in a point which will make white tracings on blackened paper, or to which can be attached a pen with ink, if white glazed paper is on the drum The vertical rod also has attached to its upper extremity a violin string which passes over a groove in the wheel at the end of the horizontal bar already described The proximal end of the violin string is attached to the support of the test types (Fig 3)

When the revolving cylinder is thus connected with the graduated horizontal bar which holds the test types, we may call the instrument an "accommodation ergograph" This ergograph was submitted for inspection to Prof Frederic S Lee of Columbia University, College of Physicians and Surgeons, who suggested some of its modifications, and to whom acknowledgment should be made for his exhaustive and important work on the entire subject of fatigue

Let us next consider how this apparatus is used The patient selected for examination should be young enough to have a certain amount of accommodation The measurements are satisfactory in proportion to the intelligence of the individual, and also in proportion to the degree in which the refraction of the eye approaches emmetropia The subject is comfortably seated with his eyes just above the level of the horizontal bar of the instrument, the face almost touching the extended horizontal plate If he is emmetropic, no glass is necessary If he is ametropic, of course the

DICAL C

Dr. Robert [illegible] Library 2959

ametropia must be corrected by a proper glass placed in the lens holder *C* or *C′*, and corresponding allowance made for the influence which the glass has on the accommodation An opaque disk is placed before the other eye

The degree of accommodation taken as the starting point for the measurement of the fatigue must, of course, be in proportion to the age of the individual If the subject is an emmetrope of about 12 or 15 years, the test types can be brought to 20 cm He then reads the letters corresponding to that distance, and evidently begins by exerting 5 diopters of accommodation

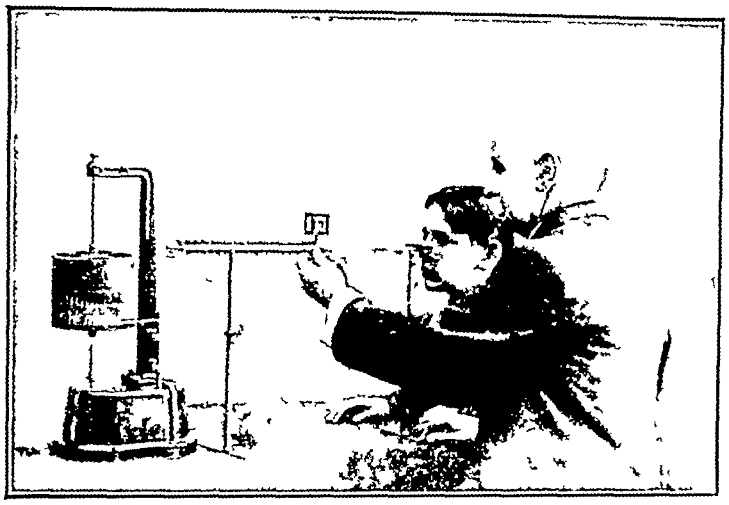

Fig 3 —Combination of test types, measuring bar and revolving drum which together form the accommodation ergograph

If the subject is much older, it is advisable to place the type first about 33 cm from the eye, and direct him to read the letters corresponding to that distance Evidently he begins by exerting only 3 diopters of accommodation

A suitable correction with lenses or selection of type having been made, the subject fixes his attention with one eye on the letters or figures selected as the starting point of the effort of accommodation As long as he can see that letter he says every few seconds "Yes, yes, yes" Meanwhile the letters are slowly but steadily pushed nearer to him This approaching of the test letters draws on the violin string which runs over the wheel, and thus lifts the pen which rests on the revolving drum

As this is done, the subject, under normal conditions should be able to distinguish smaller and still smaller letters that is to say, if he begins by reading at 25 cm, the line which corresponds to 4 diopters of accommodation, then when the letters are only 20 cm from the eye he should be able to read the type corresponding to 5 diopters of accommodation, and so on

The real fact is that when these small letters are approached to a point where they require a great effort of accommodation for even a few seconds, the ciliary muscle is no longer able to sustain this extreme contraction and suddenly relaxes, the letters blur, the subject sees little or nothing distinctly, and promptly says "No"

The letters are then immediately pushed back to the point of beginning As they recede, the pen which rests on the revolving drum falls to its first position and there has been recorded on the drum one wave representing one effort of accommodation

When the test letters are thus pushed away from the eye the ciliary muscle regains its strength But immediately the experiment begins again The subject is told to look intently at the line with which he began the first time, and at short intervals to say the word "Yes" as long as the letters are visible Again the frame with these letters slowly approaches the eye of the subject, drawing the pen upward on the revolving drum as it does so Suddenly the letters blur, the subject says "No," the letters are again quickly pushed backward, and a second wave or record is made on the revolving drum

By continuing these tests we find that the muscle of accommodation, like other muscles of the body, becomes less and less capable of exertion, or technically speaking "it runs down" This is shown on the revolving drum by the series of waves, which grow gradually less and less in their excursions Indeed, an intelligent patient can measure his or her own fatigue of accommodation, thus eliminating the personal equation of the examiner (Fig 4) The curved or irregular line which passes from the top of one such excursion to another, uniting all the apexes, has been called the "fatigue curve" In this case, of course, it would be the fatigue curve of accommodation

The term "fatigue curve" is confusing unless a word of explanation is added When it was first discovered that the successive contractions of a muscle could be recorded on a revolving drum, the muscle of a frog was ordinarily used in the experiment, and the contractions in the muscle were produced by a current of electricity broken at regular intervals Under such circumstances the successive contractions were recorded in excursions of the pen which were relatively rapid and regular, and when a line was drawn through the apexes of the excursions, thus registered, it was usually found to be a curve, sometimes convex, sometimes concave to the base line

A similar fatigue curve can be drawn through the apexes of the registered excursions of the pen when, with a glovelike attachment on the finger, the contractions of the muscles in the hand are registered They grow less and less, until further contraction is impossible But in this case the line connecting the apexes of the excursions is more or less broken

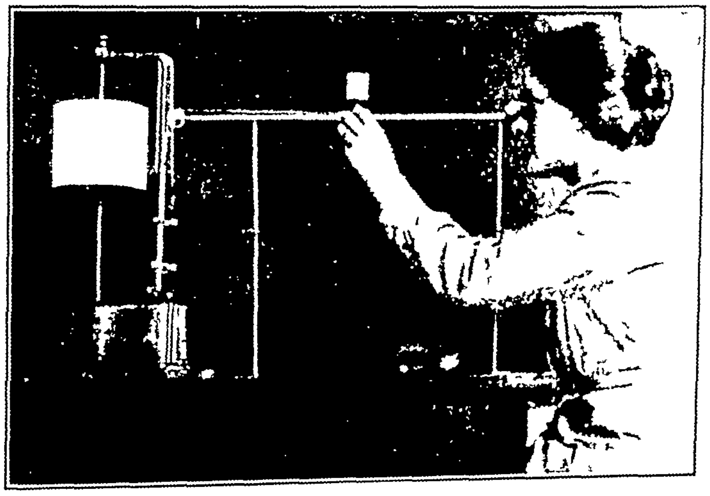

Fig 4 —Accommodation ergograph Measurement made by patient, thus eliminating any possible error on the part of an examiner

Now, when we attempt to register on the revolving drum the successive contractions of either the muscles of convergence or the muscles of accommodation, we find that in practice these contractions cannot be made to succeed each other rapidly, or with regularity The resulting line connecting the apexes of the excursions is seldom a curve, but broken (Fig 5) and more or less irregular In practice it is not necessary to connect the apexes of these recorded excursions, as a glance at the record shows the rapidity with which fatigue has been developed It is true, a question has arisen as to when we should use the word "fatigue," and when the word "exhaustion" to describe a given condition, and also as to the importance of the nervous system as a variable factor in all these measurements

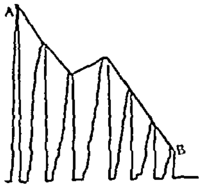

Fig 5—The broken line *AB* is the so called fatigue curve This is simply the line which connects the apexes of the different triangular excursions drawn by the pen as it moves on the revolving drum The fatigue of the ocular muscles is seldom so regular that it can be represented by a curve

In spite of this, however, the practical fact is that these tracings made by the extra-ocular or intra-ocular muscles do represent, for clinical purposes, at least, their gradual loss of power after successive contractions

Records of the fatigue of accommodation in the normal eyes are seen in Figures 6 and 7

The so-called "practical ophthalmologist" may ask of what use these records are Even if the fatigue of the accommodation can be measured, why should that ever be done? Because we learn in this way whether a strong initial contraction of a muscle really means a strong muscle or the reverse The ergograph shows us that ocular muscles like others in the body sometimes, contract two or three times so firmly as to appear quite normal, as measured by tests heretofore at our command, but when that effort is repeated several times in succession we find, to our surprise, that this contractile force is not really strong It may even be abnormally weak Certainly, such a fact, which would change the diagnosis, and therefore a plan of treatment, ought to interest even the most practical ophthalmologist

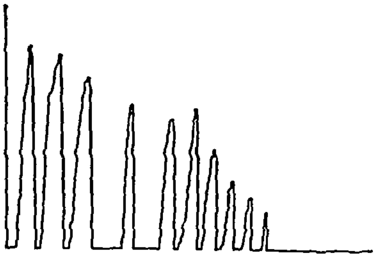

Fig 6—An average tracing showing the fatigue of accommodation as registered on the ergograph

If the limits of a paper like this would permit, it might be interesting to refer briefly to the clinical results of these measurements of fatigue—to show, for example, how the fatigue records vary somewhat in different individuals, the reasons for these variations, and the relation of the fatigue of accommodation and of convergence to each other in emmetropia, and especially how these are influenced by forms of ametropia and heterophoria But these points must be reserved for subsequent papers

During the last year the mechanism of the ergograph has been so improved that it is possible to have the muscles of accommodation write their record and the muscles of convergence write theirs, also on the same drum, one record above the other In other words, we can see at a glance the relations of these two functions to each other These records suggest the possibility, at least, of solving some of the every-day problems which heretofore have baffled us It is not too much to expect that this question of the tendency to fatigue or the ability to resist it, on the part of the ocular muscles may become an important part of every complete examination of the eyes

ABSTRACT OF DISCUSSION

Dr Hiram Woods Baltimore In the use of this instrument we are dependent altogether on the answers of the patient The patient says "yes," "yes," "yes," till he interprets what he sees by a fading out of the print, then he says "no" Now Dr Howe marks that the punctum proximum Is that really the punctum proximum? At the meeting of the American Academy of Ophthalmology in Boston Drs Lancaster and Williams presented a paper on "New Light on the Theory of Accommodation," etc Among other things which Dr Lancaster developed was this If the patient's first point of blur is taken and the eye is kept steadily fixed on that point, a certain amount of accommodation is soon regained, and that punctum proximum can be pushed in quite a little distance You can try that in your office at any time Just put on the ordinary measuring rod the point where the patient stops and says the print is blurred and have him look at it steadily for a moment He will go in 2 or 3 cm sometimes It is useful in avoiding the overcorrection of presbyopia So that the first criticism is whether the test adequately measures the real punctum proximum of accommodation

Dr G C Savage Nashville, Tenn There are two things that we must keep in mind about a muscle—muscle tonicity and muscle contractility A ciliary muscle with full tonicity will have better contractility than one with less tonicity, under the same nerve impulse The experiments done by Dr Howe with this instrument are a little more complicated than at first appears on the surface There is a center in the brain that calls on the ciliary muscle to do its contracting That, for want of a better name, we speak of as the tenth conjugate center It is acting on both eyes whether one is covered or not It is a neuritic battery That battery may be strong or weak It may be able to store a great quantity of neuricity or a small quantity That battery may be exhausted as easily of its store of neuricity as the muscle is exhaustible of its power of contractility, so that whenever we resort to this test, we do not know whether we are dealing with a weak neuritic battery or with a muscle in the eye which has small tonicity, or whether it is the reverse a great neuritic battery in the brain and a great muscle in the eye Suppose we grant for a moment that it is really muscle fatigue, that is, that the muscle fiber is broken down What results when muscle contracts? Lactic acid is set free Following this it imbibes water from the surrounding tissue and the muscle under strong and long contractility becomes waterlogged I am not able to tell whether it is muscle fatigue or an exhausted battery There is another complicating feature The tenth center never acts without exciting the third center, so that it may be the center of convergence that is being exhausted whenever this fatigue is being shown

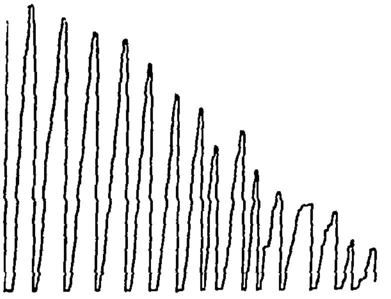

Fig 7—Another average tracing showing the fatigue of accommodation as registered on the ergograph

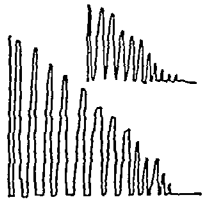

Fig 8—Record of fatigue of accommodation (below) and fatigue of convergence (above)

Dr Walter B Lancaster Boston Dr Howe has placed his finger on a very important problem the problem of fatigue But whether it concerns ophthalmology, psychology or physiology is one of the difficult problems medicine has to solve Taking up the experiments of the Italian school which Dr Howe says were the basis of his investigation I would call attention to the important fact that there are two types of curves found on testing the fatigue of the middle finger When a sufficiently heavy weight is used and the finger lifts it at sufficiently short intervals we get a curve very similar to the curve given by Dr Howe, but when a lighter weight is employed and the finger contracts less frequently, we get another type of curve Under these conditions it may contract indefinitely, there is no falling off from fatigue because the muscle is working within its capacity Dr Williams and I tested the accommodation virtually in the manner described by Dr Howe, except that our apparatus was not self-recording Thus, moving the object toward the eye and receding, and eliminating certain sources of error, we found, even after keeping it up far longer than Dr Howe, say 15 to 30 minutes, that there was no falling off, that is, the ciliary muscle was working within its capacity and showed no fatigue, just like the finger with the light weight We then tried a much more severe test of the accommodation, holding the test object as near the eye as possible without blur and keeping it there continuously at the near point and if possible moving nearer, and we got a third curve Instead of the muscle weakening and the accommodation falling off, the accommodation increased for 15 to 30 minutes Thus we found that it is not easy to fatigue the ciliary muscle, and that is practically the testimony of experience We know that we can read for hours, exercising considerable accommodation It is because the work of the ciliary muscle is so excessively small when measured or estimated in foot pounds, it only has to relax the zonule It can do this without showing any falling off from fatigue, but on the contrary an increase Possibly in myasthenia gravis or other very exceptional condition, one might get curves like those of Dr Howe but if certain sources of error are eliminated the curve of accommodation will show no fatigue under Dr Howe's test

Dr E E Blaauw, Buffalo At a more advanced age we cannot study through the nearpoint determination the contractility of the ciliary muscle, but only the plasticity of the lens This prevent us from diagnosticating paralysis of the accommodation, especially of the ciliary muscle in patients older than 60 years As to the remarks of Dr Savage about neuricity, etc, I would like to call attention to the investigations of Prof J Boeke of Leiden, who has shown that all muscles have a double innervation, one from the cerebrospinal organs and one from the sympathetic system

Dr George H Price, Nashville, Tenn In the case of the curve represented by Dr Lancaster there is a constant and accelerated impulse to the muscle There is the increased discharge of neuricity as the act is performed Therefore, if there is continuous stimulation of the same character throughout the impulse then, since it maintains a perfectly smooth curve, the muscle is the organ at fault when it begins to recede, the muscle grows weaker But if the curve is not perfectly smooth from its beginning to its end, it shows a variation in the neuricity or impulse Therefore that would indicate nervous fatigue or failure In the case of the sustained line, if that line showed a tremulous movement, up and down, then we would have a variable amount of neuricity or nervous impulse being sent to the muscle

Dr Lucien Howe, Buffalo As to the point brought up by Dr Woods, it is true that the result of the first test would not be exact We do not depend on doing the test once, but many times The question asked by Dr Savage is not one to be answered offhand I know nothing about neuricity or whether it is the eighth or the tenth center, and the patient does not care The question is, Is there fatigue? Dr Lancaster can work with a half pound dumbbell and get that kind of a curve Physiologists have found the degree of strength that can lift a dumbbell a certain number of times But it does produce fatigue, simply because the patient cannot lift it again and he knows it I do not think there is anything very subtle or strange about that It simply shows how far he can go and after awhile he cannot approach it at all, and we say it is run down This work was done under the supervision of Prof Frederic S Lee of Columbia University, and he is an authority on the question of fatigue I have simply dealt with accommodation in emmetropia, but now I am studying ammetropia and heterophoria, and the possibilities are enormous After five years of work it seemed worth while to present the results

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A PRIMARY INTRADURAL TUMOR OF THE OPTIC NERVE

REMOVAL WITH PRESERVATION OF THE BALL *

E C ELLETT, MD

MEMPHIS, TENN

History—L H, a negro girl, aged 15 years, came to the clinic of the University of Tennessee in November, 1915, complaining that the right eye had protruded for five years and was blind There was no history of trauma and the date of the beginning of the protrusion of the eye, as well as of the beginning of the failure of vision, was not definitely ascertained

Examination — The right eye was prominent and turned inward and upward (Fig 1) Motion was preserved except outward The proptosis measured 25 mm with the exophthalmometer, as compared to 15 mm in the left eye The pupil was dilated and fixed and the eye was blind, but the external appearances were normal in every way There were postneuritic atrophy of the optic nerve and some tortuosity of the veins, otherwise the eyeground was normal It should be especially noted that there was no attenuation of the vessels The left eye was normal in every respect The child's general health was excellent There was no history of tumors in the family, no abnormality of the nose or accessory sinuses, and no pulsation to be heard or felt On palpation the finger passed easily into the orbit below and to the outer side of the ball, and a smooth movable mass, about the size of the eyeball, could be felt

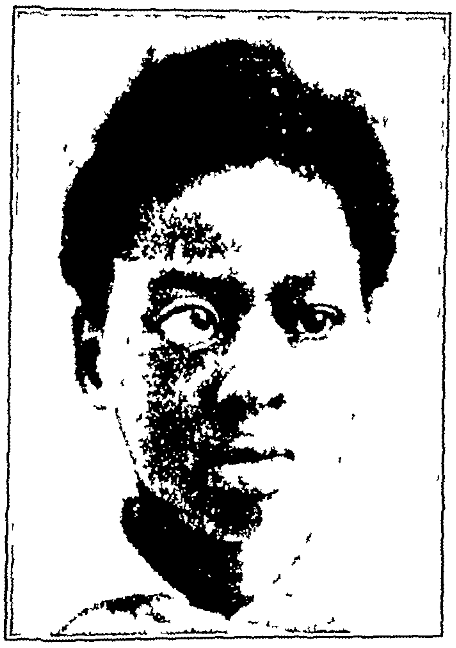

Fig 1 — Appearance of patient before operation

Operation and Result—A diagnosis of tumor of the optic nerve was made, and operation under general anesthesia performed, November 17 A vertical incision was made through the conjunctiva near the limbus to the outer side of the cornea, and the external rectus muscle exposed and divided By blunt dissection the tissues were pushed back from the tumor, which was found to be an enlargement of the optic nerve, beginning about 10 mm back of the globe The nerve was divided in front of the tumor and the ball displaced upward and inward All the tissue being separated from the tumor by blunt dissection, an attempt was made to encircle it with a snare, with the idea that it lessened in size as the optic canal was approached and the wire would glide backward to the farthest possible point As this did not seem to be taking place, the snare was removed and the tumor cut off as far back as possible with curved scissors It was certain from the inspection of the tumor, and will be equally apparent from the illustration (Fig 2), that not all of the tumor was removed, but that there was a prolongation into the optic canal, if not into the cranial cavity The finger introduced into the space left by the tumor did not feel any mass, and the apex of the orbit was in all respects exactly similar to what exists after an ordinary enucleation, this being verified by experienced observers among those present at the operation The hemorrhage was slight and readily controlled by pressure The cavity was wiped out with tincture of iodin, the cut ends of the external rectus muscle united, a few sutures put in the conjunctival incision, and a pressure bandage applied During the operation care was taken to avoid pressure on the eyeball

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June 1916

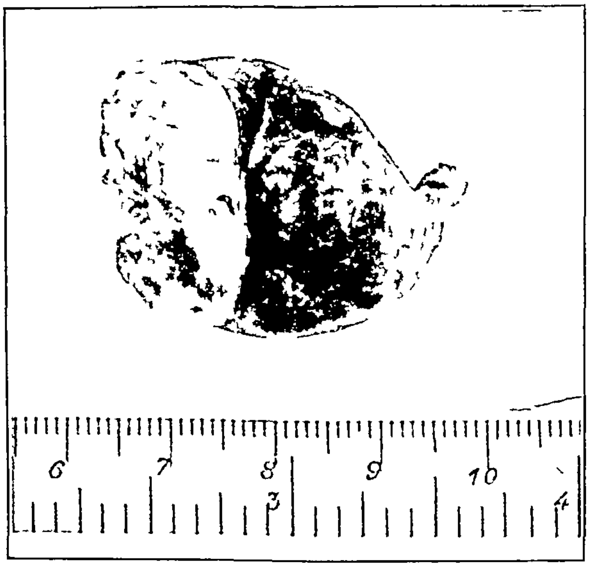

Fig 2 —The tumor The large end is the posterior end and shows that complete removal of the tumor was not accomplished

The next day there was some discoloration and protrusion from bleeding into the tissues of the orbit, but the lids covered the ball and the cornea was clear The protrusion subsided in a week, when motion was found to be limited December 1 the exophthalmometer read 15 mm in each eye There was complete paralysis of the muscles supplied by the right third nerve motion outward being preserved

December 21, the paralysis was much better

Jan 16, 1916, motion and external appearance were as indicated by the illustrations (Figs 3, 4 and 5)

The changes in the eyeground were very interesting November 27, there was edema of the whole central region of the retina and a cherry red spot at the macula The vessels were normal, except that an artery above the macula showed a broken blood current November 29, the edema was more marked, extending to the nasal side of the disk. Pressure on the eye did not cause pulsation of the vessels, but readily emptied them of blood

December 21, the edema was gone In the macular region a few fine white dots and lines were seen Near the disk, especially upward, was a deposit of black pigment dots on a pale yellowish background The pigment was also being deposited on the disk, giving an appearance like ashes thickly sprinkled on snow

Jan 16, 1916, there was more pigment deposit, almost covering the disk The vessels were slightly attenuated, especially the arteries

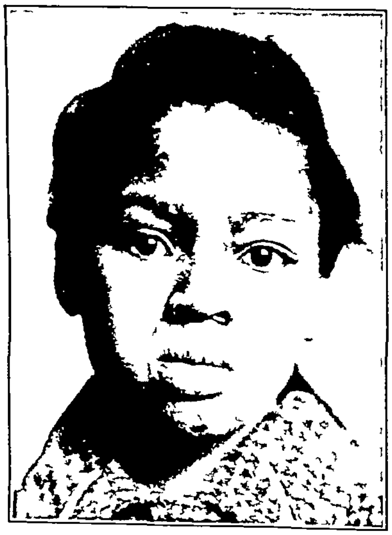

Fig 3 —Appearance of patient two months after operation

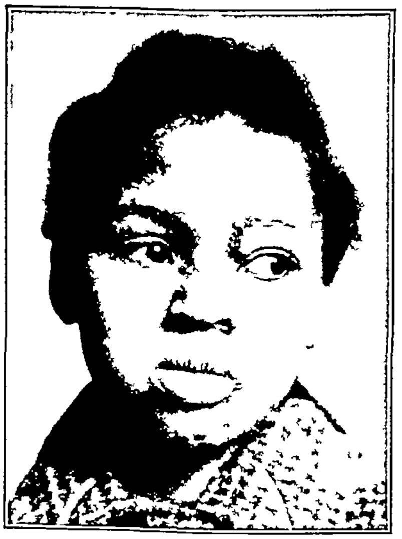

Fig 4 —Extreme motion to left two months after operation

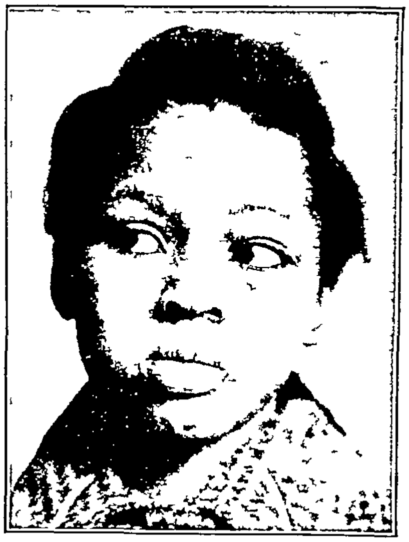

Fig 5 —Extreme motion to right, two months after operation

The Tumor—The gross appearance of the tumor is shown in Figure 2 It was smooth, tense and cystic to the touch, and measured 3 5 by 2 5 cm On section, the center was found to be decidedly softer than the periphery, but it was not fluid There were several small brownish areas, apparently due to capillary hemorrhages The appearance of the cut surface is shown in Figure 6 Tests for mucin were negative, and did not therefore indicate a myxomatous change The growth was hardened in alcohol, and cross-sections made of the nerve in front of the growth, longitudinal sections through the nerve and the front part of the growth, longitudinal sections of the posterior part of the growth, and cross-sections about the center The size of the growth made it undesirable to try to cut it in one piece longitudinally Sections were stained with hematoxylin-eosin, Van Gieson's stain, Mallory's anilin blue, and phosphotungstic acid hematoxylin

The whole tumor was surrounded by a dense fibrous capsule, continuous with the dural sheath of the nerve anteriorly The subdural space could be made out, as well as the pial sheath, and none of these structures showed much departure from the normal The longitudinal sections of the nerve and anterior portion of the growth showed that not all of the nerve fibers passed into the tumor, but many of them ended at a point where the sheaths made a sort of hour-glass contraction (Fig 8) Serial sections were not made, so that it cannot be said that all the nerve fibers terminated at this point, but if any persisted, it was as a mere thread No trace of the central vessels could be found in the lumen of the hour-glass figure which the dural sheath assumed at this point, which was about 10 mm behind the globe It would seem, therefore, that the direct retinal circulation was interfered with before the operation was performed Back of this hour-glass contraction the dural cavity enlarged rapidly and widely At first the contents of the cavity were the nerve fibers, slightly altered, but soon a dense infiltration with the tumor cells took place, and the nerve fibers were quickly replaced by the tissue of the tumor The farther back one went the more completely did the tissue lose all resemblance to optic nerve, the only part recognizable being the sheaths and connective tissue septa, and a small bundle of tissue, resembling nerve fibers, close to the sheath at one side

Histologic study of the various sections of different portions of the tumor showed, in the undegenerated and better stained areas, the presence of many spherical cells with well stained spherical nuclei surrounded by very little cytoplasm These cells, morphologically, appeared to be glia cells They were found diffusely scattered throughout the specimen Interlacing in various directions were fibrils, which according to differential stains (phosphotungstic acid hematoxylin) were neuroglia fibrils This, however, could not be determined definitely, as the differential stains were not clear, owing perhaps to imperfect fixation Many vascular channels with large lumina were present In addition there were present areas of degeneration and tissue elements, in a state of necrobiosis, the exact histologic structure of which it was impossible to determine

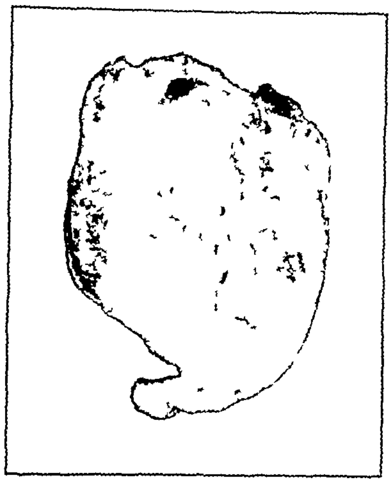

Fig 6—Cut surface of the tumor

A diagnosis was made of a moderately slow growing glioma, perhaps, better, fibroglioma (the 'fibro" here referring to, or indicating neuroglia fibrils, and not connective tissue fibrils) Owing to the presence of many vascular channels with wide lumina in the specimen, the diagnosis "telangiectatic glioma" may be more accurately applied

For the histologic study of the specimen, I am indebted to Dr H T Brooks

COMMENT, AND REVIEW OF LITERATURE

Tumors of the optic nerve are not very common, and it was surprising to me to see three such cases in a single year One case was reported elsewhere,[1] and in one operation was refused Still, as Byers has well said, one turns to the literature rather than to personal experience for information on the subject There are two papers whose scope is such that there is not much else to do but refer to them, namely, Byers' monograph and a paper by Hudson[2] The latter is the more recent, and in its reports of 210 cases are probably most if not all of those which Byers collected ten years before He refers to the study of the subject by Lehr[3] in 1877, and thinks the majority of the reported cases are of the type described by Lehr and Willemer

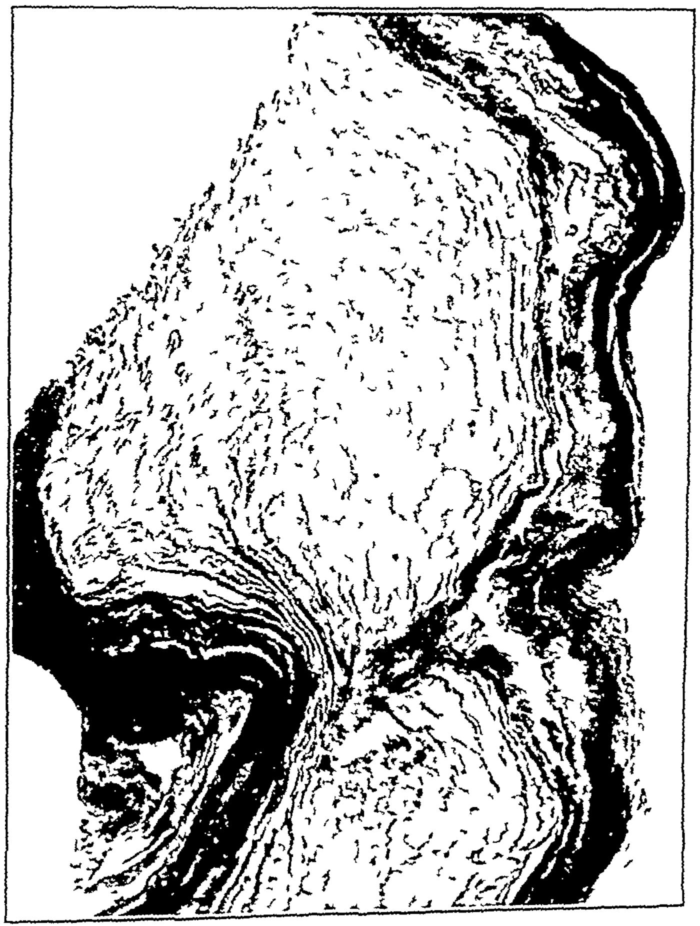

Fig 7—Section of nerve and tumor, × 24 The upper half of the picture represents the nerve The constriction of the sheath, at which point most of the nerve fibers end, is well shown

The tumors of this type are met with usually in quite young subjects and are of slow and painless growth Anatomically the new growth is found to lie within the dural sheath, and while it is usually separated from the globe by a short length of uninvolved optic nerve, in many, if not in the majority of cases, it is not limited to the orbital portion of the nerve, but extends into the cranial cavity, more or less extensively The tumor is in most cases constituted by a sheath portion, lying between the dural and pial sheath, the latter having usually a more or less excentric relation to the former The tissues of the intervaginal space show often an irregular hypertrophy and an irregular distribution of connective tissue amongst which the cells peculiar to the tumor lie, while in the nerve portion the tumor tissue occupies the more or less expanded spaces between the connective tissue septa[4]

A variety of cells enter into the formation of the tumor, four forms being described by Vossius and Salzman In only one case,[5] has mucin been found, though many of the reported cases showed what looked like myxomatous change

In many tumors there is a strong disposition on the part of the tumor tissue to become organized into a more or less compact fibrillated material Between the two extreme types of tumor thus evolved various intermediate types are met with, a fact which is probably responsible for the great variety in nomenclature attached to tumors of this class[6] [See Parsons]

While leaning to the term used by Fischer of "gliomatous degeneration," Hudson would elaborate the name to "degenerative gliomatosis," implying a generalized overgrowth of neuroglia tissue, of infiltrative character, dependent on some degenerative change in the tissues of unknown etiology[7] Byers[8] speaks of two varieties of tumors, which he describes thus

> In the first place one had to do with growths the basis of which was essentially an overgrowth of fibrous connective tissue elements of the nerve but very protean in character, inasmuch as one found every phase of development from the embryonic myxomatous type to firm fibrous bands The appearances were unquestionably influenced by conditions of stasis in the lymph and venous channels which resulted solely from the local anatomic arrangement of the parts, and altogether the changes suggested those characteristicall present in cases of elephantiasis These findings were in agreement with those of practically every student of the subject as a whole, and can still perhaps be best described

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[1] Ellett, E C Tr Am Acad Ophth and Oto-Laryng 1915
[2] Hudson Royal London Ophth Hosp Rep 1912 xviii, 317
[3] Lehr Handbuch der gesamten Augenheilkunde (Graefe Saemisch), v, 910
[4] Hudson (Footnote 2), p 318
[5] Manfredi Quaglino
[6] Hudson (Footnote 2), p 319
[7] Hudson (Footnote 2) p 332
[8] Byers, W G M Tumors of the Optic Nerve, The Journal A M A, July 4, 1914, p 20

by the term fibromatosis, which I used in the title of my first contribution to the subject

In the second group of neoplasms the changes, varying somewhat in character, were attributable to a proliferation of the local endothelial cells, and the growths were classified as endotheliomas

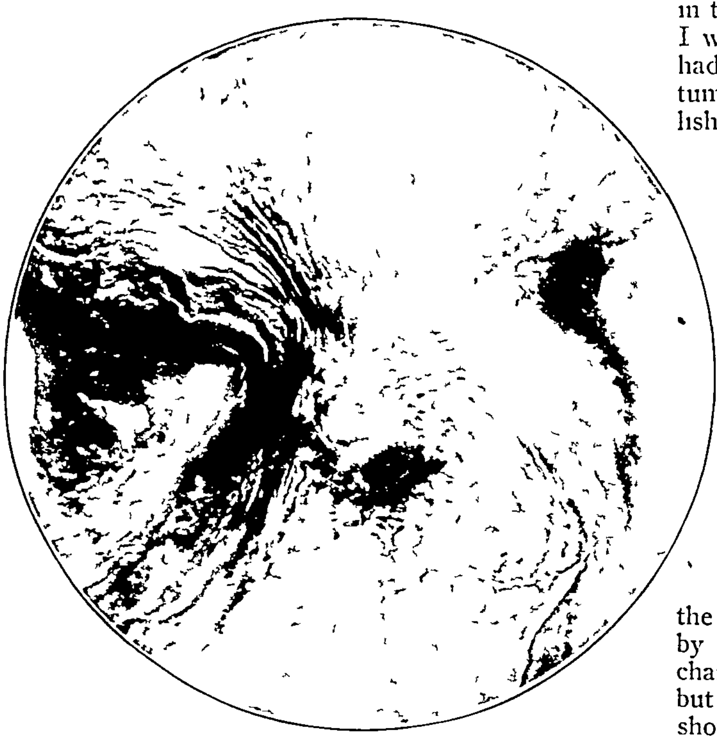

Fig 8 —Same as Figure 7 × 38 Neither nerve fibers nor vessels pass through the constriction

Verhoeff[9] thinks that all tumors arising within the stem of the optic nerve are gliomas

The case here reported presents the features described as characteristic of Byers' second group, while my other case to which I have referred was distinctly of the first group From this limited experience I would think Byers' idea of the two types is correct, although as stated elsewhere, the hyperplasia in my other cases affected only the neuroglia fibrils

Of the cases, reports of which were collected by Hudson, 118 are examples of this process Of these, forty-five cases were observed before the fifth year, twenty-four from the sixth to the tenth, and twenty-nine from the eleventh to the twentieth

> In no single case has a local recurrence in the orbit been recorded, while cases have been followed without recurrence for twenty-four years The intracranial condition is in the majority of cases either stationary or so slowly progressive that the patient eventually succumbs to some common ailment

Since the growth does not tend to invade the ball or the tissues of the orbit, its removal with preservation of the ball, without disturbing the orbital tissues, seems to be advisable This may be done by the method of Kronlein, with temporary resection of the outer bony wall of the orbit, or by an incision to the outer or inner side of the ball, as suggested by Knapp and others, sometimes combined with canthoplasty, as advocated by Lagrange From a limited experience I am not impressed with the advantages of the Kronlein operation, and in the comparatively shallow orbit of a child, the operation as carried out in the case herewith reported gave an exposure which left little to be desired

In explanation of the fact that the vascular changes in the retina after the operation were at first so slight, I would suggest that the central artery of the retina had been gradually occluded by the growth of the tumor and that a collateral circulation had been established at some time prior to the operation The section of the nerve and some of the vessels on which the retina depended for its nutrition has been followed, first, by the signs of obstruction to the arterial circulation, and later by atrophy of the retina The pigmentary changes are secondary to degeneration, just as we see in retinitis pigmentosa, although the effect of the traumatism to which the eye was necessarily subjected during the operation may have played some part On several occasions I have seen very similar pigment changes follow a contusion of the eyeball

It will be seen that the clinical features of the reported cases were very similar to those presented by the cases which I have seen, and are well described in the quotation from Hudson, given above Particularly striking is the resemblance between this case and one reported by Arnold Knapp[10] last year The postoperative changes in the fundus were strikingly similar but that they may assume another character is shown by a case of Treacher Collins,[11] in which a large white area like dense connective tissue occupied the whole central region of the fundus At one edge of it could be seen the optic disk, faintly outlined and

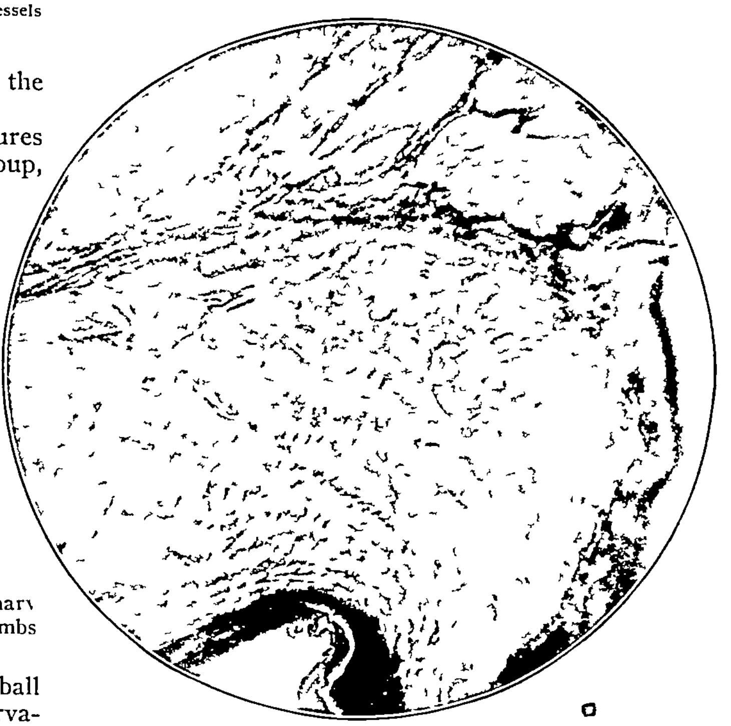

Fig 9 —A longitudinal section through the beginning of the tumor nearest the optic nerve × 15 The lower two thirds of the picture show nerve fibers the upper third the connective tissue septa with tumor cells

more to be located by the convergence of several branching white lines representing the retinal vessels[12]

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[9] Personal communication to the author

[10] Knapp Arnold Am Ophth Soc. 1915

[11] Collins Treacher Tr Ophth Soc U Kingdom xxxii 596

ABSTRACT OF DISCUSSION

Dr G E de Schweinitz, Philadelphia When Dr Byers presented his paper I, among others, spoke, as Dr Ellett has, of the comparative ease with which the area of operation can be reached by the method Dr Ellett has pursued Long ago Dr Hermann Knapp dissected in the manner described It has been my experience in one or two cases that this form of dissection was facilitated by a canthotomy on the outer side In regard to whether this or a Kronlein dissection should be performed, I can only say that in a certain number of cases of orbital as well as intradural tumors it has seemed to me that the approach was as satisfactory as it could have been by means of the Kronlein dissection I am aware that this belief is not shared by some of my colleagues In regard to the pathology of the three tumors that I have removed, the first was almost pure fibrous tissue The second was practically identical with the pathologic histology demonstrated by Dr Ellett, except that there were present certain large cells which the pathologic department of the university believed to be ganglion cells The third case was interesting because the pathologic histology of the tumor showed it to be a psammosarcoma, with numerous psammoma bodies Referring to this particular patient, there was a large and rather rapid recurrence in the orbit, so that the orbit was filled with a dense mass which required evisceration, and the histology of the eviscerated portion corresponded with the histology of the primary growth Therefore, it would seem that occasionally there is orbital recurrence Dr Knapp in his presentation of the case to which Dr Ellett has referred, pointed out that although many years have elapsed the patient is not entirely safe from recurrence In none of my cases has there been such a recurrence, one of them is of more than eight years' standing To be quite fair, I must say that I have not removed an intradural tumor of the optic nerve and preserved the eyeball, but Dr Knapp has done so by the Kronlein dissection on the other eye, making the incision through the conjunctiva It would seem to be fair first to explore before resorting to the much more formidable procedure, and it would seem, in some circumstances, if not in all, that it is as satisfactory a dissection as the Kronlein

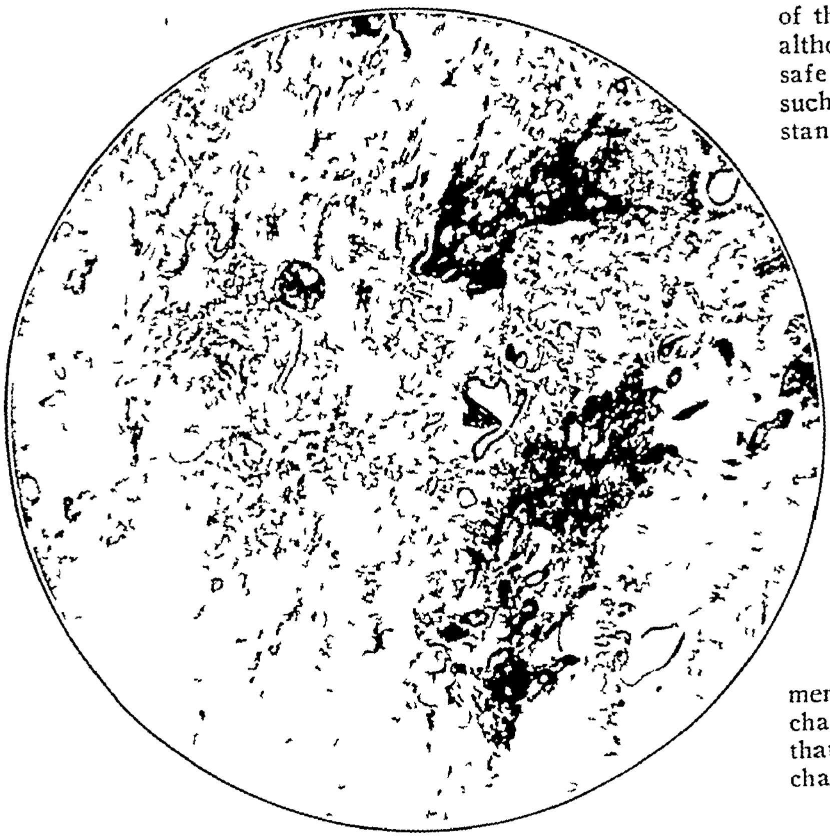
Fig 10—A longitudinal section through the posterior half of the tumor, × 15 The arrangement of the tissue elements, the great vascularity, and the connective tissue overgrowth (dark areas) are shown

Dr Arnold Knapp, New York I would like to repeat what Dr de Schweinitz has just said, that we must wait for many years before regarding these cases as entirely benign The other point I should like to bring out is the change in the retinal circulation after these tumors The case Dr Ellett described resembled my own and others described in the literature, in that the retinal circulation continued for some time after the optic nerve and its vessels had been divided A patient I operated on in 1914 was seen a week ago and there is no sign of any return The mental condition of the boy is unchanged There was one change in this case which was very interesting to me, namely that in the macular region a very distinct chorioretinal change has developed, this possibly explains that a good many of the changes in the choroid and retina at the posterior pole of the eye are due to interference with the posterior ciliary blood vessels, because they are not like the slight changes we find in the macula after embolism of the central retinal artery

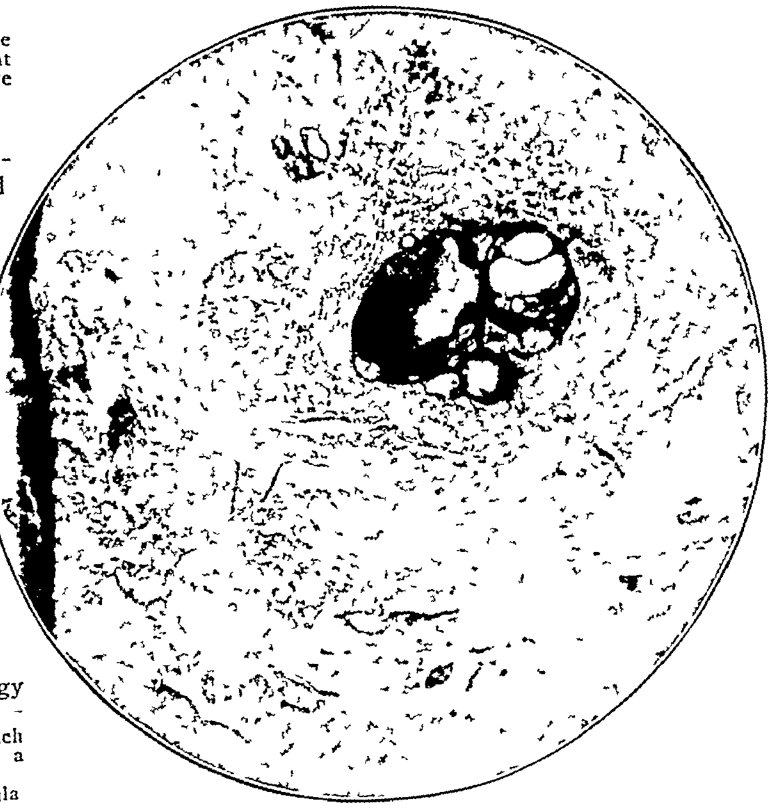
Fig 11—Cross sections of tumor, × 15 One very large blood channel and many smaller ones are shown In this section the cellular elements predominate, but the magnification is too low to bring them out clearly

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[12] The following are some of the contributions to the subject which have appeared since the publication of Hudson's paper, which gave a complete bibliography

De Schweinitz Tr Sec Ophth, Coll of Phys and Surg, Philadelphia, Jan 18 1912
Komoto Nippon Gankwa Gakukwai Zasshi, February 1912
Schirmer Arch Ophth, xli, 383
Astvatzatouroff Weist, Ophthal, xxiv, 391 (Ann d'ocul, Brussels, cxlviii, 399)
Kubli Ztschr f Augenh xxviii 393
Sweet Tr Am Ophth Soc, xiii, 391
Sattler Arch Ophth, xlii 25
Sulzer and Rochon Duvigneaud, Ann d'ocul, Brussels, cxlix, 161
Bartotolla Policlinico, Rome Jan 25, 1914
Eleonskaja Ztschr f Augenh, xxxi 278
Zitovski Weist, Ophtal, xxx, 473 (Arch d'opht, xxxiv, 518)
Smolianoff Geneva thesis
DeLord and Revel Ann d'ocul Brussels, cli, 466
Knapp Tr Am Ophth Soc, xii, 660
Heed Tr Am Ophth Soc, xiv, 320

CONDYLOMA ACUMINATUM OF THE ANAL REGION IN THE MALE *

A RAVOGLI, M D
CINCINNATI

The rarity of the occurrence of condyloma acuminatum in the anal region of the male, as well as the uncertain nosologic place of these papillary acanthomas in syphilology, has prompted me to report two cases of them which recently occurred in my hospital service Many physicians are not clear whether condyloma acuminatum is to be considered as the result of syphilitic infection, or whether it must be considered as a vegetating papillary growth independent of syphilis

In a general way it can be stated that condyloma acuminatum is only a venereal wart, and these growths are so called because they grow around the genitals, and are preceded or associated with venereal diseases They come on mucous membranes and on the skin moistened, macerated and irritated by abnormal purulent secretions In ordinary cases condylomas grow as discrete excrescences In some cases, as in mine, they become confluent and coalesce, forming large masses of cauliflower appearance They are rarely dry, and are usually moist, according to the region they occupy In a general way they are found together with venereal diseases There is also a belief in the possibility that they may grow on skin or mucous membranes exposed to long irritation, to purulent discharge, independently of venereal cause

The irritation produced by the gonorrheal secretion in a balanoposthitis or vaginitis, when cleanliness is neglected, is sufficient to inflame the skin or the mucosa, cause excoriations, and denude the papillae, which under the constant irritation grow as papillary vegetations

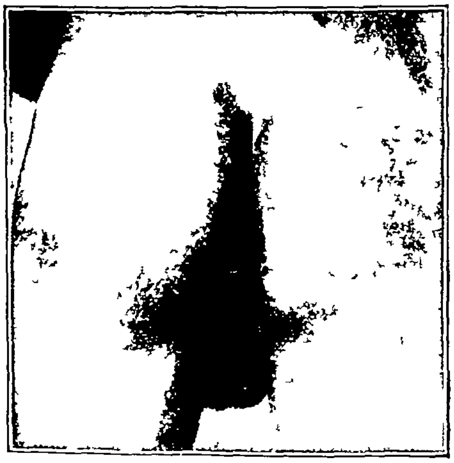

Fig 1—Condyloma acuminatum of anal region (Case 1)

Stumpke[1] and Klingmuller described vegetations developing from gonorrhea around the female genitalia and the anus In my experience the same vegetations are found in the mucous membranes which have been the seat of irritation from chancroidal infection In the same way, when the skin or mucous membrane has been affected with mucous patches, these have been misnamed condylomata lata, assuming, according to circumstances of locality, different degrees of growth

The mucous patches which are nothing else than syphilitic papules, the true exponent of the secondary manifestations of syphilis, show a different appearance according to the regions of the skin of the body The dry papule occurs on the surface of the skin, and so remains until involution, which causes desquamation of the epidermis, owing to its location

On the contrary, when the papules are seated on the mucous membranes or on the adjoining skin, they are constantly moist with a mucopurulent discharge of their own, or with urine or fecal matters, or with constant perspiration, and become moist papules, papula humida, mucous patches The epidermis is consequently macerated, cast off, excoriated, the surface is covered with necrotic detritus, and the papillary layer is exposed in the center of the papule, and begins to proliferate in the form of small granulations, which give to the mucous patch the name of hypertrophic papule

I must mention that in cases of phimosis from the accumulation of the smegma, balanitis may arise, and give origin to warts which have no specific nature

The name condyloma acuminatum serves well to represent all those vegetations due to papillary growths, acanthoma papillare, while condyloma latum stands for syphilitic mucous patches It may be misleading, however, and is apt to give a wrong idea as to the entity of the disease

It would be much better to drop the name of condyloma latum as useless, and retain that of condyloma acuminatum, to designate vegetations, granulations and warts of nonspecific nature, which, being seated on the genitals, and being preceded or associated with venereal diseases, have taken the name of venereal warts

REPORT OF CASES

Case 1—A man, aged 20, white, baker, of good general physical constitution, had always enjoyed good health Two years previous to the present affection he had syphilis He was treated with repeated injections of salvarsan until the Wassermann reaction was negative During the early secondary manifestations, mucous patches around the anus had been the most persistent symptom Six months later small warts began to grow at the anal rim between the mucous membrane and the skin Other warty vegetations grew around the perianal region, and in about six months' time they had grown to a large vegetating mass, to fill up the entire intragluteal region

When he was admitted to the venereal service, he showed the anal and perianal region filled up by a mass of papillomatous vegetations, confluent from 1 to 1½ inches long, which was protruding out of the buttocks, of cauliflower appearance Of the papillomatous excrescences some were sessile, attached to the base, while others were pedunculated, and attached to the others by the end-point They were soft to the touch, and of a red cyanotic hue Most were implanted at the edge of the anus, some were scattered on the perianal region

The patient could no longer walk on account of the growth being tender and painful The mass, as shown in Figure 1, had filled up the whole anal and perianal region from the coccyx to the perineum The mass was rather soft to the touch tender, and did not cause serious obstruction to the expulsion of the feces An exploring finger could be introduced into the rectum without difficulty, showing that the anus was not strictured, and removing any suspicion of possible epitheliomatous nature The Wassermann test was negative, and no symptoms of active syphilis could be found Some secretion from the rectum was examined for gonococci, but the result was negative

Case 2—A negro boy, aged 22 showed the same kind of vegetations around the anus He had suffered syphilis for nearly two years Has been treated intermittently with mercury mostly by the mouth The Wassermann reaction was strongly positive The mass of vegetation around the anus

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* Read before the Section on Dermatology at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Stumpke Ueber gonorrhoische Granulationen Munchen med Wchnschr 1914 No 28 ref Gior ital d mal ven 1914

THE DESIRABILITY OF USING MIOTICS AS ADJUVANTS TO MYDRIATICS*

HAROLD GIFFORD, M D
OMAHA

That homatropin may very exceptionally cause glaucoma has long been known, but a total of *eleven* cases of glaucoma, out of the millions in which homatropin has been used during the last thirty-five years, certainly would not indicate any great danger *in its use*, and although many cases have doubtless gone unrecorded, even my own exceptional experience would not indicate that it occurs *in more* than, approximately, one in 10,000 cases This does not constitute any serious indictment of the use of cycloplegics and *mydriatics* for refraction and ophthalmoscopic work, even if there were no way of preventing the danger, we should accept *it as* we do the danger of quinin amblyopia or salvarsan encephalitis, in the interest of the greatest good, but, luckily, we have an almost certain preventive

Some years ago I[1] reported the following case of glaucoma caused by the use of homatropin

Case 1—A woman, aged 21, had 4 diopters of hyperopia The eyes began to pain her from eight to ten hours after a homatropin test, but I was not called until the second day, when I *found* both eyes *to be nearly* blind from acute glaucoma, which was relieved within three hours by a solution of pilocarpin and cocain (2 grains of the former and 1 grain of the latter to the dram, 1 drop every half hour for three *hours), but the first* examination of the fundus, which was made two days later, showed numerous hemorrhages *in the* center of each retina, and although *one eye regained* normal vision, the other never improved beyond 20/70, and showed a tendency to glaucoma which required the use of eserin (physostigmin) as long as she was under observation

In reporting this case, I laid stress on three points -1 If this patient had lived in some remote locality, she might easily have lost the sight of one or both eyes 2 The retinal hemorrhages, which permanently damaged *one* eye *in this* case might *possibly* have been avoided, if I had taken more time to reduce the tension 3 To *prevent* such occurrences, the use of homatropin should always be followed by eserin even in comparatively young patients

Since then I have had four more cases of homatropin glaucoma

Case 2—A woman of about 30, while in my office, being tested under homatropin, developed acute glaucoma in the left eye with marked hypertension and a sharp arterial pulse

Case 3—A woman, aged 65, had a single drop of 4 per cent homatropin in the left eye, for the examination of fine changes at the macula As near as I could learn, she received the regular dose of eserin, but in spite of this, she *developed an acute glaucoma in* the left eye during the same evening *In both* these cases the glaucoma yielded promptly and permanently to eserin (physostigmin)

Case 4—Another patient was not so *fortunate* She was a woman of 44 *years, who came at a time* when several years of immunity had so dulled the edge of my anxiety that I had permitted the rule to give out-of-town patients eserin to use at home gradually to fall into disuse She received a *homatropin refraction* test of both eyes, followed by 2 or 3 drops of eserin (1 grain to the ounce) She then went to her home about 150 miles distant, and after about a month, some friend wrote me that the sight of the *right* eye had never come back I advised her to return at *once*, but neither saw nor heard anything more of her for about two years, when she stopped in and I found the right eye to be entirely blind, with tension plus 2, dilated pupil, shallow chamber and excavated disk It was quiet and had never given any pain to speak of The left eye was normal

Since then I have tried strictly to enforce the rule to give a vial of eserin solution to out-of-town patients and have had no further trouble of the same sort with them This rule, however, is not entirely fool and accident proof Some patients lose the bottle or spill its contents, and occasionally, in spite of all precautions, a patient gets away without any eserin

This is what happened in my fifth and, *it is to* be hoped, my last case

Case 5—A woman, aged 69, had slight lens *and* vitreous opacities in each eye R E V = 20/20 L E V = 20/70 L E turned in a little and had been slightly amblyopic since childhood She was given a drop of homatropin, 4 per cent, in each eye for ophthalmoscopic *purposes* Through a misapprehension, when *she* was *ready* to *leave*, the office girl gave her eserin in the *right* eye only That night the *left* eye became painful and she felt so bad generally that although *she* did not think it worth while to report to me, *she stayed* in bed for a week She then returned with *the* right eye normal, but the left eye had marked glaucoma with V = light perception only, tonometer R E 20 mm L E 60 mm Eserin did no *good*, and the next day an iridectomy, *preceded by a posterior sclerotomy, was done*, but her vision improved only to fingers at *6 feet*, with T 51 mm

We are often tempted to complain of the too anxious patient, but *the* too trusting kind, of which *Cases 4 and* 5 were such striking examples, is much more dangerous

When I reported my first case of homatropin glaucoma, only two others had been reported, that of Sachs,[2] in which a man of 58 received a single drop of *1 per cent* homatropin for ophthalmoscopic purposes, and that of Shears,[3] whose patient was a woman of 52, who received homatropin in one eye for a refraction test Since then I have found reports of four more cases beside my own Friedmann,[4] for a refraction test, *put 3 drops of* a 1 per cent solution of homatropin into each eye of a woman, aged 37 That night glaucoma developed in the left eye only, and as it failed to yield to myotics, an iridectomy was done several days later, with some improvement This woman gave a history of going blind in the same eye three days after a similar test, three years before, but as she had recovered completely in a few days, and the eye seemed *perfectly normal*, *Friedmann* felt justified *in using homatropin*

In the discussion of Friedmann's case, Strickler[5] mentioned a similar case in a woman, aged 30, and Stevens,[6] still another in a patient (male or female?), aged 30 years

Edgar *Stevenson*[7] *gave a man*, aged 24, a couple of drops of homatropin solution, 4 grains to the ounce, on account of irritation following the removal of a foreign body from the cornea Acute glaucoma developed in the affected eye the next day

In six of these *eleven* cases (Shears, Strickler Stevens, Stevenson and two of mine), a prompt and complete cure was obtained by the use of a myotic

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June 1916

[1] Gifford Harold *Ophth Rec, 1900, p 328*

[2] Sachs Centralbl f Augenh, 1884, p 499

[3] Shears Ophth Rec, 1900, p 150

[4] Friedmann Ophth Rec, 1908, p 92

[5] Strickler Ophth Rec, 1908, p 93

[6] Stevens Ophth Rec, 1908, p 94

[7] Stevenson, Edgar Ophthalmoscope, 1913, p 73

In one of my patients, the myotic cure was complete in one eye and incomplete in the other, in another, an iridectomy produced some improvement, but the eye was of little use In one case (Shears) an iridectomy was necessary with perfect result In one case (Friedmann) an iridectomy was necessary with improvement In one case (my fourth), without treatment, total blindness in one eye resulted

Shears, in reporting his case, recommended that when homatropin was used, eserin should be instilled 'before the patient leaves the hospital" In my first report, I made the further suggestion that out-of-town patients should take eserin with them for use the next day, a rule, the importance of which is indicated by the deplorable result in my fourth case, in which it was neglected

My present plan is this Each homatropin patient (except young children), whether the drug has been used for refraction or for ophthalmoscopic work, beside having the eserin instilled before leaving the office, receives from 10 to 15 drops of eserin solution, 1 grain to the ounce, in a small vial with a partly attached label on which is printed the following

> Put 1 drop into eye with butt end of match or tooth pick tonight at suppertime and bedtime, after today, 1 drop three times a day until pupil of eye and sight for near things gets same as before test If necessary to refill, have druggist put in solution of eserin sulphate, 1 grain to ounce

A match is recommended rather than a dropper, because it is less apt to waste the solution The importance of using the eserin the same night is indicated by the fact that in several cases the trouble has begun at that time, in one case even when physostigmin had been used in the afternoon The reason for the indeterminate period of use is that the time required for the homatropin effect to wear off varies considerably In a case reported by de Schweinitz,[8] the effect lasted five days Why my own experience with homatropin has been so unusual I cannot say For a refraction test I generally use 1 drop of a 4 per cent solution four times in the course of an hour This strength is not unusual so far as I can learn, but that the intensity or, at least, the duration of the homatropin effect has something to do with the danger is indicated by the fact that while in four cases glaucoma resulted from a single application, these patients, with one exception, were over 55 years of age, while of the seven who received homatropin for a refraction test, all but two were under 40 In other words, the use of a single drop of a mydriatic solution carries very slight danger except after the age of predisposition to glaucoma has been reached Hence, for ophthalmoscopic work, the weakest solution that will widen the pupil enough is the best Whether for this purpose euphthalmin or cocain is as serviceable as a 0 5 per cent solution of homatropin I doubt

Of course there is nothing about homatropin glaucoma that is essentially different from any mydriatic glaucoma, such as has been observed a number of times after atropin and cocain, also after duboisin,[9] scopolamin,[10] euphthalmin,[11] epinephrin,[12] and even holocain[13], and the fact that since the introduction of homatropin more cases of glaucoma have been reported from it than from atropin is, aside from its freer use probably because glaucoma from atropin once having been established as a thing to be looked out for, it has not been thought worth while to report it It follows that when any mydriatic is used for temporary effect, it should, except in early childhood, be followed by some myotic I must admit that after using cocain for foreign bodies or in lacrimal cases I generally think it enough to instill 2 or 3 drops of eserin before the patient leaves, and, when only a little cocain is used, before a lid application, for instance, I use nothing at all to neutralize it The mydriatic effect of holocain and epinephrin is usually so slight that it can be neglected I generally exclude young children from attempts to neutralize mydriatics, both because the danger is probably absent and because they put up such a fight With this exception, although the youngest patient so far reported was a woman of 21, I have not felt like drawing an age line on the prophylactic use of eserin

It is worth noting that of the eleven cases of homatropin glaucoma, the patients were women in eight cases

CONCLUSIONS

Glaucoma from homatropin or other mydriatics, whether used for refraction or ophthalmoscopic work, is a slight but real danger It is almost entirely preventable, and for this purpose an eserin solution not only should be instilled immediately after the examination, but also should be given to the patient to use at home until the effect of the mydriatic is gone

I know that eserin, in some form, is now generally used after homatropin refraction tests, but I have a decided impression that it is not used so often or so thoroughly as it should be

Brandeis Block

ABSTRACT OF DISCUSSION

Dr Eugene Smith, Detroit I do not appreciate any particular difference between homatropin and the other mydriatics in the production of glaucoma I have seen several cases resulting from the use of other mydriatics The only point I can see is the frequency, perhaps, of the use of homatropin and the infrequency of the occurrence of glaucoma in that connection Most of us are more or less conversant with the various theories of glaucoma, and the paper does not call for extensive discussion of these theories, still it is necessary to consider a proper *raison d etre* I am inclined to think that a vasomotor disturbance plays an important part in the matter under consideration In the few cases I have seen considerable turgescence following very shortly after the application of the mydriatic It can readily be understood that presupposing a small circumlental space and a blocking of the filtration angle a glaucomatous condition might develop Experience suggests some general rules which may ward off or control the condition and check it permanently No doubt it would be well to assume a possibility of its occurrence in all hyperopic eyes and follow the suggestion of the author to use eserin in all cases after the use of a mydriatic, in young adults as well as in middle age The first observations with regard to mydriatics producing glaucoma were made by Haskett Derby of Boston, I think in 1866 or 1868 so that America deserves the credit for calling the attention of the profession to this extremely important subject

Dr Charles May, New York I have used 2 per cent of homatropin in combination with 1 per cent cocain for the purpose of estimating errors of refraction for twenty or twenty-five years I have invariably used eserin in 0.5 per cent after each examination I do not consider it entirely fair to allow a patient to leave the office after the pupils have been dilated with homatropin without using eserin, subjecting them to discomfort for thirty-six or forty-eight hours when it is possible to make them comfortable in a little while with the instillation of eserin I have performed as many of these examinations under homatropin as any man and I have never had a glaucoma result My plan is to instil such a solution in four doses at intervals of three minutes, wait one hour, undertake the examination, and then put in 1 drop of 0 5 per cent solution of eserin and follow that in three minutes with a second drop I tell the patients they will have a great deal of uncomfortable twitching of the lids for a while I have never had any unfortunate results Perhaps the reason I have never had trouble is because I am careful of the homatropin I use, and I make all my own solutions In some cases in which glaucoma has resulted we cannot be sure, if the oculist has not put up his own solutions, that he has not been using atropin In the second place, if he allows a nurse to put in the drops, how does he know she has not used atropin I never allow a nurse to put drops in a patient's eye without first showing me the bottle I am surprised that everybody does not use eserin after homatropin, even in children It is so easy, so successful, so universally dependable, that in an hour the patient has lost the inconveniences of homatropin, and I believe has gotten rid of all dangers

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[8] De Schweinitz Nagel Michel s Jahresb 1890 p 129
[9] Heyl Nagel Michel s Jahresb 1882 p 412
[10] Treutler Nagel Michel s Jahresb 1905, p 618
[11] Knapp Ring Nagel Michel s Jahresb 1903 p 651
[12] McCallan Nagel Michel's Jahresb 1903 p 651
[13] Plastinin Klin Monatsblt f Augenh June 1914 p 896

Dr W W Kahn, Detroit I am glad that Dr Gifford was not carried away by his unfortunate experiences to discourage the use of cycloplegics for refractive purposes There is certainly nothing against and much in favor of the use of a miotic after the use of homatropin and atropin, respectively The principal point in connection with this question is the problem of the causation of primary glaucoma While its symptoms and pathology are well understood, its causation is still problematical The most probable cause of primary glaucoma is the one pointed out years ago by Dr George M Gould, namely chronic and unrelieved eyestrain Eyestrain does raise the tension, not much but perceptibly, and relief of eyestrain lowers heightened tension, also not much but perceptibly The practical point to the refractionist is to differentiate between the heightened tension of glaucoma and the heightened tension of eyestrain In the first case a cycloplegic is naturally contraindicated while in the second case the relief of eyestrain must be effected at all hazards, which to me as to most of our colleagues is impossible without the use of a cycloplegic That this question is not at all problematical was brought home to me a few years ago by a patient, 30 years of age, who came to my office bearing a bottle of drops labeled "physostygmin" and the diagnosis of glaucoma had been made by his oculist His pupils were narrowed down to pinpoints The tension was about +1 in both eyes He had constant eyeache and headache and was unable to use his eyes for near-work longer than for one or two minutes The fundus, as much of it as was visible through the narrow pupils, was normal Vision was 20/20 plus o u My attempt to refract him without a cycloplegic proved unsuccessful, due to his accommodative spasm With the permission of the patient I instilled a 2 per cent homatropin solution every ten minutes for one hour and a half, but even then the refraction was not a success As the homatropin did not increase the pain or tension I ordered atropin for a day and a half The atropin instillations relieved the patient of all symptoms of strain or pain After a careful refraction the patient recovered entirely, the tension became normal and today he is studying medicine In twenty years I never saw a case of glaucoma produced by a cycloplegic, but I do realize that I run the risk of provoking an outbreak of glaucoma in an eye predisposed to it, but there is the still greater danger of contributing to the causation of glaucoma by not using a cycloplegic for refractive purposes when a cycloplegic is indicated We must adopt the routine use of a miotic after the use of a cycloplegic

Dr John Green, Jr St Louis It seems to me probable that Dr Gifford's first patient had an established juvenile glaucoma before the instillation of homatropin This case was reported in 1900 before the days of accurate instrumental tonometry In eyes, the tension of which is only slightly above the physiologic limit, finger palpation often fails to reveal the glaucomatous state The fact that the eyes of this patient ever afterward showed a tendency to glaucoma is additional proof of the presence of the disease prior to the instillation of the drug A chronic glaucoma was converted into an acute glaucoma A young woman, 26 years of age, consulted me with symptoms of asthenopia—frontal headache, blurred vision in reading, etc She had a manifest hyperopia of 2 D, with which V equalled 6/6, either eye Before using homatropin I examined the eye grounds, and to my amazement found typical glaucomatous cups Her fields were much contracted Oft repeated palpation during the three weeks the patient was under observation did not convince me that the tension lay in the glaucomatous zone (This case also occurred before the days of the tonometer) Is there anything in the action of homatropin that distinguishes it from other cycloplegic drugs? Dr Gifford believes that atropin glaucoma has not been reported "because glaucoma from atropin once having been established as a thing to be looked out for, it has not been thought worth while to report it" Atropin does not induce ciliary hyperemia and dissipates it if present We are all familiar with the congestion of the conjunctiva and ciliary region which follows repeated instillations of homatropin for cycloplegic purposes May not such congestion ensue from a single drop of a strong (4 per cent) solution? I doubt very much if other men follow Dr Gifford in the use of a 4 per cent solution, 2 per cent and 3 per cent are the usual solutions used for cycloplegia and one grain to the ounce will suffice for mydriasis May not the congestion of the ciliary body and root of the iris induced by homatropin be a factor in the induction of acute glaucoma in susceptible eyes?

Dr Arthur G Bennett, Buffalo I have been in the habit of using a 2 per cent solution of homatropin with 1 per cent cocain for about twenty-five years, and I have had two cases of acute glaucoma following this instillation The first case occurred in a young woman, aged 26, who came in to have glasses fitted I allowed the homatropin to be put in her eye without examining the fundus, so that I cannot say what the condition of the nerve was She had a most acute attack of glaucoma in one eye, in which she had 6 diopters of myopia The eye did not respond to the eserin and I was obliged to do an iridectomy She made a good recovery Three years ago a woman about 45 years of age came with the same kind of a history, of vision failing for reading, and I used my stock drops She had an acute attack in both eyes while in the office I used eserin and gave morphin hypodermically The pupils did not come down in the office I kept her there two or three hours She had nausea, vomiting and a great deal of edema of the conjunctiva, and was very ill I sent her to the hospital and followed as soon as possible When I got there the pupils had contracted and she was well, a recovery with 20/20 vision The very first time I examined that fundus I would defy you to say that it is a glaucomatous nerve The tension is normal with the tonometer Since then I have followed out systematically the use of eserin, two grains to the ounce in every patient, and have had no further trouble

Dr Hiram Woods, Baltimore My experience with homatropin glaucoma is limited to one case, but it was quite instructive In a man 49 years of age homatropin in 1 per cent solution was used for mydriasis for examination He developed a typical acute glaucoma in the office He was blind and I took him home in a carriage and stayed with him all day, using a 2 grains to the ounce eserin solution He recovered without permanent bad consequences The point brought up by Dr Green was illustrated in that man I did not inquire into his history at first, but after having done the mischief I found that the man had had from time to time halos about an artificial light If I had been more careful in getting the history I would have been saved trouble and he would not have suffered a dangerous glaucomatous attack I think it is important when approaching the age of possible glaucoma to know something of the history or to examine the field before using the mydriatic Another point is, what are we to do if we do not use homatropin?

Dr Albert E Bulson, Jr, Fort Wayne, Ind It is quite possible that the use of a cycloplegic in refraction work is responsible for many more cases of glaucoma than is generally conceded Doubtless every ophthalmologist of considerable experience has had at least one case, or knows of such cases in the practice of others, cases that have not been reported I have encountered two instances in which glaucomatous symptoms followed the use of the cycloplegic, though in neither instance were there any serious aftereffects, as the condition was discovered promptly and active elimination and the use of miotics brought about a subsidence of the symptoms However, they pointed to the advisability of using a miotic more often following the use of homatropin for refraction work or to facilitate ophthalmoscopic examination I do not believe that it is so imperative that miotics should be used in children and young adults, but in patients past 30 years of age it would seem to be a precaution to be adopted There are, however, a certain number of cases in which atropin is indicated but before using atropin or any other cycloplegic it is well to take into consideration the tonometer findings and the various clinical manifestations that we know have a tendency to produce glaucoma This will include faulty elimination, high blood pressure, the shallow anterior chamber, etc The existence of a beginning simple glaucoma should be eliminated Another point which is worth considering is the susceptibility which some patients have to the use of eserin I have seen a marked conjunctivitis, and dermatitis of the skin for a considerable area about both eyes, produced by one instillation of eserin Pilocarpin, while less effective, is therefore preferable, though more than one instillation is usually required I never have thought it necessary to give the patient a miotic for home use after having used a miotic in the office, but in view of the possible prolonged action of homatropin, the practice would seem to be a wise precaution In this connection, however, I wish to emphasize the importance of continuing the effect of the cycloplegic for its sedative influence on strained ciliary muscles, but it is my opinion that these cases should be under careful observation during the cycloplegia

Dr E E Blaauw, Buffalo The best prevention of homatropin glaucoma is not to use it You do not need to use it It is unphysiologic, in my opinion, and absolutely unnecessary

Dr John E Weeks, New York I have used homatropin for at least twenty-five years and I have had no case of glaucoma in my own practice I have, however, seen one case in my clinic and one case in consultation I have seen one case of glaucoma induced by the use of cocain It is my custom to take the tension of the eyeball with the finger I do this in all cases before I apply the mydriatic If the tension is above normal apparently and the pupil is of moderate size, I do not use the mydriatic But I do not hesitate to use the mydriatic in cases of known glaucoma if the pupil is small and has been made small by a myotic and I wish to get a clear view of the background of the eye I use cocain if I can procure suitable dilatation but if I cannot produce suitable dilatation I do not hesitate to use homatropin It is my practice to use a miotic in every case after a mydriatic has been employed The miotic I use in older individuals is eserin, in younger persons, pilocarpin In young persons if the tension of the eyeball after the use of the mydriatic is normal or below the average normal, I sometimes omit the miotic If the pupil responds to the miotic only slowly I give them a miotic to use at home I think if we will carefully study the tension and make it the rule to use the miotic subsequently, the danger of exciting a glaucomatous reaction is certainly small The case that occurred in the clinic was that of a young woman 17 years of age whose family history was poor Her mother had had glaucoma Homatropin was employed by my assistants in determining the refraction An acute glaucoma followed that same afternoon before the patient had left the clinic She was admitted to the infirmary and miotics employed, but in spite of the use of strong solutions of eserin the pupils did not become small and I was forced to do an iridectomy Fortunately, the glaucoma was cured This occurred about ten years ago, I saw the patient last summer, and no return of glaucoma had taken place

Dr W H Wilder, Chicago I hope this valuable article by Dr Gifford will not be misconstrued by certain individuals who attempt to examine the refraction of the eye, because of failure to read the context It has been extremely gratifying to learn that so few of our members report attacks of glaucoma following the use of homatropin My experience is limited to only one case in a woman about 48 years of age, in whom the instillation of a 2 per cent solution excited an acute attack that was promptly relieved by eserin I am inclined to think, however, that in any case of high tension excited by homatropin, some other cause at some other time might easily bring on an attack of glaucoma against which we should be on our guard It seems to me that because of certain anatomic peculiarities of the eye that we do not yet understand, a comparatively small number of persons under certain exciting conditions will develop glaucoma, while the vast majority, because of the absence of such anatomic peculiarities, will never have an attack no matter how they or their eyes are excited I wish to emphasize this thought, that in view of the few cases that occur from homatropin as shown by this discussion we should combat the idea that a mydriatic is not necessary for refraction, and so defeat the purposes of certain irresponsible individuals who are endeavoring to practice this part of ophthalmology

Dr Frederick Frisch, Atlantic City, N J Referring to the alarming symptoms which have been mentioned after the use of eserin solutions, I found that there was more twitching when much had run over, coming in contact with the skin of the lids Another reason for the twitching is the rather abrupt action of watery solutions on iris and ciliary muscles Both of these conditions can be eliminated by using the eserin in ointment form When watery solutions are used, they should contain one-half per cent of cocain

Dr Joseph W Charles, St Louis Twenty-five years ago I was taught that in cases of glaucoma which could not be operated on for one reason or another, pilocarpin was the mydriatic of choice to be used at home, that there was a definite danger of iritis in certain cases in which eserin was used indiscriminately by the patient

Dr Harold Gifford, Omaha If you use enough eserin you can get adhesions between the iris and the lens, but in the way I have used it it is not necessary, as a rule, to use more than three or four drops, and in almost every case the effect of the homatropin is entirely gone by that night I generally use three or four drops the first day and have no need of using it afterward, and I have seen no danger from iritis after its use It seems to me that there are two or three points that ought to be kept in mind as the result of this discussion First the importance of being as careful as possible not to use homatropin in a case which is predisposed to glaucoma but that does not insure you There is no warrant for allowing patients to go away from the office without eserin after using homatropin In the cases cited by Dr Bennett and in mine, in which after they had glaucoma the eyes have been perfectly normal, with no sign of glaucoma by any test one could make how are you going to find these signs before using homatropin? In other words, the test either by the finger or by the tonometer is not a sufficient safeguard against the possibility of homatropin glaucoma Second what shall we do in the way of prophylactic measures before using homatropin? Shall we use the tonometer in every case? I know well there is no use suggesting that It might receive the official approval of this society but nobody would do it in all cases, unless just beginning their work But it certainly is wise if you are going to use homatropin in a patient over 40 to examine the fundus first Test the case first carefully with the finger and if there is the slightest question in the history or any other part of the case to suggest danger use the tonometer

But even if you do that you are not sure you may not have homatropin glaucoma as the result of its use Another point that has been brought out is the desirability of using as weak a solution of homatropin as is consistent with the effect to be obtained I have used a 4 per cent solution I did it on the recommendation of the first man who began to use it, and stuck to it I am going to use a weaker solution If a 2 per cent solution will do the work, then we ought to use it I notice some men use 1 per cent I am going to try it The weaker solution is certainly desirable As to the strength of the eserin to be used afterward, Dr May has used 0 5 per cent He has used two drops only and has never seen any trouble There are thousands who have never used anything and have never seen any trouble, but if two drops of a 0 5 per cent solution of eserin in the office will do the same thing that a one grain to the ounce solution will do used throughout the next day, let us use it But I do not believe it gives the same assurance of immunity that the same or a weaker solution would give if the patient took it home to use in case the effect did not pass away, especially patients going out of the city We must help them out of this danger

ANGINA EPIGLOTTIDEA ANTERIOR

REPORT OF A CASE CAUSED BY THE BACILLUS INFLUENZAE

SAM N KEY, M D
AUSTIN, TEXAS

In spite of the conflicting evidence on the question of whether angina epiglottidea anterior is a separate pathologic process, or only a part of a general involvement of the adjacent structures, it is an undeniable fact that a curious inflammation of the epiglottis in which there is remarkably little involvement of the rest of the throat does occur Clement F Theisen,[1] in 1900, reported three cases of this disease and was quite positive then that angina epiglottidea anterior, or as he styled it "acute infectious epiglottitis," occurs as a primary affection of the epiglottis However, this view is disputed by Semon,[2] Kyle,[3] and others In 1914, Theisen[4] reported another case of this disease and made the statement that added experience with this condition has led him to believe Semon's views, "that the various forms of acute septic inflammation of the throat and neck, hitherto considered as so many essentially different diseases, are in reality pathologically identical, that they merely represent degrees varying in virulence of one and the same process," still hold good and angina epiglottidea anterior should not be classified as a separate process

During the past fifteen years very little has been written on this disease, so the following case, while strikingly like some of the cases reported several decades ago, may add something to the bacteriology of this condition

CASE REPORT

Jan 16, 1916, G G, a physician, aged 36, developed the sensation of a foreign body in his throat He had had no previous illness for several years The following day he consulted me Examination of the pharynx revealed a slight redness of the mucous membrane The tonsils were slightly congested but not enlarged No treatment was administered By night, however, deglutition became quite difficult and the temperature was 103 F The patient slept little that night on account of pain in the throat

The next day, January 18, the symptoms gradually became worse until by night the pain was constant and almost unbearable Deglutition was now extremely difficult and the temperature was still 103 Breathing was a little difficult while the patient was lying down

January 19, I made a second examination The pharynx and faucial tonsils appeared the same as at my first examination Speech was muffled and there was a nasal twang A laryngeal examination revealed the source of the trouble A marked edema of the anterior surface of the epiglottis was present The epiglottis measured about 1 5 cm in the anteroposterior diameter, was dark red, and was boggy to the touch On the anterior surface were two ulcers, measuring about 3 mm in diameter, round, sharply demarcated, with a grayish exudate covering the base of each ulcer While a complete view of the larynx could not be obtained, it appeared normal The lingual tonsils were congested, but not enlarged

Scarification of the epiglottis was considered as soon as the diagnosis was established, but, as the symptoms seemed to be abating, this was not done Twice daily the ulcers were cleansed with hydrogen peroxid, and a 1 per cent ichthyol solution was applied The ulceration and edema of the epiglottis gradually subsided until by the twelfth day after the onset of the disease the epiglottis was practically normal

COMMENT

Little is known of the bacteriology of angina epiglottidea anterior Theisen realized this and attempted to identify the causative organism He made cultures from the epiglottis in two of his cases, isolating the pneumococcus and streptococcus in one and the pneumococcus and staphylococcus in the other On the fourth day of the disease in my case, I made cultures and smears from the ulcers Dr G M Graham, bacteriologist for the Texas State Board of Health, reported that these showed large numbers of influenza bacilli associated with a few pneumococci and staphylococci The latter were in such small numbers that it is probable they represent the contamination which would almost necessarily result in making a culture or smear from this region Cultures and smears were again made three days later, when the ulcers showed well marked evidence of repair The *Bacillus influenzae* had now almost disappeared from the ulcers, leaving the pneumococcus and staphylococcus the predominating organisms

It appears that the ulceration and edema of the anterior surface of the epiglottis was caused by the *Bacillus influenzae* While this organism is found in the normal throat, its occurrence in large numbers in almost pure culture on an ulcer would seem to give it a pathologic rôle It is significant, too, that this infection occurred during the presence of a rather severe epidemic of grip in the patient's community

In the case outlined above with the ulceration and edema and all evidence of active inflammation confined to the epiglottis, the process appeared to be primarily in the epiglottis, but my limited experience with this condition prevents me from forming any definite opinion on this point However, that the *Bacillus influenzae* may, under certain conditions, have a selective activity for the epiglottis, and that this may be of more frequent occurrence than is generally supposed, is a possibility

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The Care of the Child—The duty of bringing up children belongs to the mothers, and whatever we do we must not be too ready to relieve them of their responsibility, we can, however, do much to see that the rights of children are not ignored and that the mothers have the opportunity given them of learning how best to rear their children—H T Ashby, Infant Mortality

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[1] Theisen, Clement F Albany Med Ann, 1900, xxi, 396

[2] Semon, Sir F Tr Roy Med and Chir Soc, London, lxxviii, 189

[3] Kyle, D Braden A Text Book of Diseases of the Nose and Throat, 1914, p 652

[4] Theisen, Clement F Tr Am Laryngol Assn, 1914, p 243

New Instruments and Suggestions

A MOSQUITO COLLECTING DEVICE

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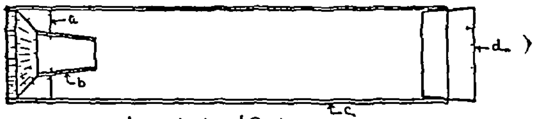
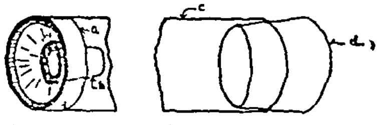
Health officials, entomologists and others who may have occasion to collect mosquitoes in numbers for identification, dissection or experimental purposes will find this apparatus to have decided advantages over the means generally employed The apparatus is the application of the principles of the fly trap to the capturing of mosquitoes

The advantages of this means of collecting over the older methods of using test tubes, chloroform and cyanid killing tubes are (1) rapidity in capturing, (2) absence of injury and rubbing of the specimens by having to close tube, (3) avoidance of wetting specimens with excess chloroform, (4) prevention of escape of insects when an attempt is made to catch more than one live mosquito in a tube (when live specimens are desired), (5) ability to capture mosquitoes on walls, ceilings and other places inaccessible when both hands are necessary to close the collecting tube, (6) relief from necessity for transferring single specimens from collecting tube into containers thereby saving time, (7) elimination of necessity for carrying a large number of collecting tubes when the collection of a great number of live specimens is desired, (8) avoidance of loss of time awaiting death of mosquitoes by weakening of killing agent

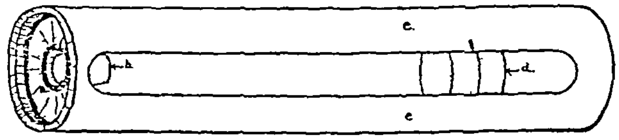
A collecting tube of any size may be used, but the one preferred and recommended is a glass (or celluloid) tube about 1 inch in diameter and 5 inches long, open at both ends, one end of which, when in use is closed with a cork or other stopper the other end with the specially designed or devised trap arrangement shown in the accompanying illustration The trap end may be described thus



Longitudinal Section



View showing trap device placed in tube.



Collection device in wooden case to prevent accidental breaking

Device for collecting mosquitoes *a* funnel shaped cork stopper three eighths inch thick having central opening half an inch in diameter *b* small glass tube of truncated cone shape three fourths inch long diameter of large opening half an inch of small opening, three eighths inch *c* glass tube 5 inches long 1 inch diameter open at both ends *d* cork stopper for untrapped end *e* wooden cylinder to prevent accidental breaking of tube

A cork stopper to fit the tube, three-eighths inch thick, having a central opening half inch in diameter, large enough to accommodate the "trap" tube The upper surface of this cork is beveled from the outer edge to the inner opening, giving it a funnel shape

A small glass tube about three-fourths inch long, having a truncated cone shape to fit tightly in the opening of the funneled cork, the outer end half an inch in diameter and tapering for its length, with an inner opening three-eighths inch in diameter

The small conical trap tube may be made from half inch glass tubing or the end of an ordinary plain glass centrifuge tube, cut to measure, may be used A cone of glass or celluloid has the advantage that the entrance of mosquitoes may be observed The cork with the trap tube is placed in the end of the collecting tube so that the thin edge of the cork is about one eighth inch clear of the rim of the collecting tube

Instead of glass tubes, celluloid, such as used for windows in automobile tops, may be made into the size tubes desired and fastened by small brads or paper fasteners Additional strength is afforded by several turns of adhesive plaster around each end Advantages of celluloid over glass are its being nonbreakable it is lighter and for field workers any amount may be carried in sheets and tubes made as required

In making a catch, the trap end of the tube is placed over the resting mosquito The insect finds that it is surrounded, and in attempting to escape selects the only way out toward the light, through the glass cone into the large collecting tube

In experiments to determine the rapidity of capturing and the efficiency of the trap in retaining the mosquitoes, it was observed that the insects passed almost immediately through the trap end of the tube, so that the operation could be repeated as rapidly as the tube could be placed over the insects The average time for each catch from the time of placing the tube over the mosquito was three seconds These catches were made in New Orleans in the month of February Probably in hot weather and with greater activity of the insects, catches would be even more rapid

The results of tests showed that the size of the lumen of the small truncated cone (the trap) had to do more with the rapidity of capture than the escape of the insects from the tube Five tubes having different sized cones were used, the external opening ranging from five-sixteenths inch to half an inch and the internal or smaller opening from three-sixteenths to three-eighths inch Of eighty specimens of *Anopheles crucians* caught and retained in the five collecting tubes and placed under lantern globes closed with mosquito netting, only one escaped in twenty-four hours This occurred from the tube with the largest openings (three-eighths by one-half inch)

For collecting mosquitoes to be used experimentally in the laboratory, the number of specimens to be caught in the tube of the capacity given above probably should not exceed more than ten, as injury to each other may occur However, if they are being caught rapidly and transferred to large cages or other containers, greater numbers of them may be caught in each tube

The same principle may be applied to the large cyanid collecting tubes (2¼ by 6 inches), the only difference being the larger sized cork required for the trap apparatus The capture is somewhat slower, as the insect has a greater degree of freedom in the larger funneled cork The mosquitoes will not escape, however

The small collecting tube described may be carried in the pocket, as mosquitoes were found not to escape even if the tube was darkened Caution should be used in keeping mosquitoes in tubes without moisture for more than an hour or so The necessary moisture can be supplied by placing a plug of moistened cotton in the trap

Killing by the use of chloroform or other agent may be accomplished with this tube as with the apparatus generally used for such process

The device described is easily made by any one, or could be put on the market by manufacturers of entomologic apparatus at a small cost

U S Marine Hospital

Protein in Diet —The quantity of protein desirable in the dietary had best be given consideration after discussion of the dietary habits of mankind It is sufficient for the present to realize that protein is necessary to maintain tissue in repair, to promote growth and that when taken above the requirements for these purposes it stimulates the organism to a higher level of heat production —Lusk, The Fundamental Basis of Nutrition

Therapeutics

ACUTE ANTERIOR POLIOMYELITIS (INFANTILE PARALYSIS)

This article is reprinted at this time—with corrections and additions—because of the extensive outbreak of infantile paralysis in New York The article appears in "The Prevention and Treatment of Infections," published by the American Medical Association, in 1915

Acute anterior poliomyelitis is an inflammation of the anterior gray matter of the spinal cord, that portion supplied by the central arteries, the branches of the anterior median artery of the anterior longitudinal fissure However, it may also effect both the white and gray matter of the brain, the intervertebral ganglia and the abdominal ganglia Flexner believes that the route of infection is practically always by the nasal mucous membrane to the lymphatic channels of the olfactory lobes, the spinal fluid and then to the nerve tissues

It was not definitely shown, until 1909, that this disease belonged to the infections and was contagious, although it had been long suspected More or less isolated instances and some slight group attacks had occurred in America for many years, but we have had epidemics only since 1907, caused probably by importations of the germ from Europe, where it has been long endemic In 1909, Landsteiner and Popper reported that they had caused infantile paralysis in monkeys by inoculating them with a spinal cord emulsion obtained from a child who died from this disease Noguchi and Flexner later reported that they had been able to cultivate a causative organism of this disease Recently, Flexner and his co-workers[1] have shown that the contagium is contained in the secretions of the nose, and that undoubtedly there are carriers of this disease It seems to be demonstrated that the infection or poison reaches the nervous system through the lymph, but probably reaches its point of activity, namely, the spinal cord, by means of the cerebrospinal fluid In previous experiments Flexner and Amoss[2] have shown that in all probability infection does not reach the individual from the bites of insects, as they were unable to infect monkeys by directly introducing the virus into the blood This does not preclude the possibility of domestic animals like cats and dogs carrying the contagium and causing infection by way of the nostrils and lymph channels It has not been shown that flies transmit the contagium, nor that the association with stables has increased the liability of infection, as has been suggested It does not seem frequent that more than one person in the same household is affected, although such cases occur However, in epidemics the majority of patients are likely to come from the same general region

Fraser[3] of New York reports his observations on ninety cases of epidemic poliomyelitis He found that the age varied from 9 months to 14 years The majority of cases, especially when it is sporadic, has always occurred in young children under 5 years of age The death rate is generally low, varying from 4 to 16 per cent, but the paralyses *resulting* are constant and frequent

Flexner and Lewis' splendid work on this subject is reported in various numbers of The Journal[4] They state that the infecting agent in this disease belongs to the class of minute filterable viruses which cannot be demonstrated with certainty by means of the microscope They also showed that spinal fluid withdrawn on the third day of the infection, before the appearance of paralysis, contains the virus which will cause infections of monkeys Flexner, Noguchi and Amoss[5] have recently again shown that the minute micro-organism isolated from poliomyelitic tissue is probably an etiologic factor, if not the cause, of epidemic poliomyelitis Flexner and Lewis[6] also showed that the disease can be transmitted from monkey to monkey They further showed that the germ or virus resists freezing, and therefore the disease is not stopped by cold weather They also believe that one attack confers immunity

Lucas[7] found that monkeys after inoculation showed a lymphocytosis during the acute stages, but a marked and constant leukopenia The blood at this time also showed an eosinophilia This disturbance in the white blood count disappeared when the acute stage was over

PREVENTION

It is quite probable that the so-called "distemper" which at times attacks dogs and may attack horses, is really caused by this same infection Hence, a dog affected with distemper should be isolated, and no child should be allowed to associate with it While it has not been shown that flies will carry this disease, in all probability they may transmit the infection by their feet Consequently, flies should be excluded by proper screens, if possible, from any animal that suffers from distemper, and certainly should be prevented from reaching an individual sick with poliomyelitis

As early as Feb 12, 1910, Flexner and Lewis[8] showed that this disease was contagious by means of the secretions of the mucous membrane of the nose especially, and also of the throat, and therefore that every patient should be isolated, and that the disease should be made reportable to the boards of health

The nurse and the family should understand that the same care must be exercised in destroying the contagium and preventing the contamination of articles and substances by the secretions of the nose and throat of a poliomyelitis patient as is so well understood must be taken in diphtheria

As soon as a case is reported to the board of health, the school board should be informed (as such cases are frequently in children too young to go to school) that they may send home from school the other children of the family, and if there is an epidemic, perhaps the other children of that tenement The incubation period is said to vary, and may be as long as ten days, but to be safe from causing infection in others, such children should remain out of school for two weeks

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[1] Flexner, Simon, and Amoss, Harold L Localization of the Virus
and Pathogenesis of Epidemic Poliomyelitis, Jour Exper Med, Sept 1,
1914, p 249, abstr, The Journal A M A, Sept 26, 1914, p 1136
[2] Flexner, S, and Amoss, H L Penetration of Virus of Polio
myelitis from Blood into Cerebrospinal Fluid, Jour Exper Med, April,
1914 p 411, abstr, The Journal A M A, April 25, 1914, p 1360

[3] Fraser Am Jour Med Sc, July, 1914, p 1

[4] Flexner, Simon and Lewis, Paul A The Transmission of Acute Poliomyelitis to Monkeys, The Journal A M A, Nov 13, 1909, p 1639 The Nature of the Virus of Epidemic Poliomyelitis, ibid, Dec 18, 1909, p 2095, Experimental Epidemic Poliomyelitis in Monkeys ibid, April 2, 1910, p 1140, Experimental Poliomyelitis in Monkeys, ibid, May 28, 1910, p 1780

[5] Flexner Simon, Noguchi, Hideyo, and Amoss Harold L Concerning Survival and Virulence of the Microorganism Cultivated from Poliomyelitis Tissues, Jour Exper Med, January, 1915, p 91

[6] Flexner, Simon, and Lewis, Paul A Epidemic Poliomyelitis in Monkeys, The Activity of the Virus, The Journal A M A, Jan 1, 1910, p 45

[7] Lucas Tr Mass Med Soc, June, 1910, the subject is also discussed by Gay, Frederick P, and Lucas William P Anterior Poliomyelitis Methods of Diagnosis from Spinal Fluid and Blood from Monkeys and in Human Beings, Arch Int Med, September, 1910 p 330

[8] Flexner, Simon, and Lewis Paul A Epidemic Poliomyelitis in Monkeys A Mode of Spontaneous Infection, The Journal A M A, Feb 12, 1910, p 535

EARLY SYMPTOMS

During an epidemic symptoms of acute infection with fever, excessive irritability and hyperesthesia should be suspected of infection with this disease

Although a patient who is old enough may complain of headache and pains, especially in the epidemic form of the disease, still, in this as well as in the sporadic form, the onset may be so rapid that a child well the night before may be found with high fever and even with paralysis in the morning Pain is referred generally to the muscles of the back and legs, and later to the muscles of the arms The temperature in serious cases may be high, but the ordinary range of rectal temperature was found by Fraser to be from 101 to 103 The pulse-rate is high, and is generally over 120 While pain may keep the little patient awake, and there may be a great amount of irritability and restlessness, drowsiness and heaviness was noted by Fraser in half of his cases, although there were often twitchings and jerkings during sleep In two-thirds of his cases he found stiffness of the neck and back, which is so characteristic of cerebrospinal meningitis The greatest tenderness is found generally in the extremities Although this might last but one or two days, it sometimes persists for three or four weeks The tendon reflexes are found generally absent

The spinal fluid is clear, with a moderate increase of cells and of globulin In the first week, the cells are more increased and the globulin scant or absent Many of the cells may be polymorphonuclears In the second and third weeks both the total number of cells and the proportion of polymorphonuclears are decreased and the other types of cells increased In some cases, however, the fluid may appear normal

Although, as just stated, paralysis may occur almost coincident with the illness in sporadic cases, in epidemic cases paralysis seems to develop most frequently on the third or fourth day The acute illness lasts from one week to ten days A large number of Fraser's cases showed some slight facial paralysis If the respiratory muscles were affected, the prognosis was dire There may be paralytic interference with urination, and defecation may be difficult from inability of the abdominal muscles to act

It should be remembered that many abortive forms of this disease probably occur without any paralysis, and many times without a diagnosis, and such cases may doubtless spread infection Koplik,[9] in reviewing an epidemic of 1,200 cases, states that many atypical forms occur

As to the extremities, one or both arms may be paralyzed, or one arm and one leg, or both legs, or there may be crossed arm and leg paralysis The arm paralysis is not often complete, and the recovery is more rapid Complete loss of response to faradism means a bad prognosis as to recovery, and atrophy will rapidly occur If response to faradism is not completely lost, the outlook, with proper care and treatment, is good The rapidity of recovery from paralysis, and the number that completely recover vary with the different epidemics, but the number that completely recover is lamentably small More scientific treatment by nerve and orthopedic experts will doubtless make this percentage of complete recoveries much greater

TREATMENT

A The Acute Stage—The same care in isolation, and of the secretions of the nose and throat, to prevent possible infection of others or contamination of articles, should be carried out as has been described for the other infectious diseases Flies and all domestic animals must positively be excluded from the sickroom As soon as the diagnosis is positive, the disease should be reported to the board of health, whether or not it is a reportable disease in the community

Flexner[10] has shown that bedbugs may become infected with this disease Whether or not they can transmit the disease to a human being by their bites has not been shown Mosquitoes and lice have not yet been shown to be guilty of carrying the infection, but they, as well as bedbugs and fleas, should be eliminated

As Flexner states that the virus is eliminated by the intestines as well as by the nose and throat, all movements of the bowels during the course of the disease, and perhaps for some little time after the acute stage is over, should be as thoroughly disinfected as they are in typhoid fever Lucas and Osgood[11] found the virus in the nasal secretions of a human being four months after the acute stage of an attack of poliomyelitis They also found the virus in the nasopharynx of persons who were in attendance on a patient ill with the disease, and in the nasopharynx of a patient who had had the disease 204 days after the acute infection Kling,[12] however, thinks that the virus soon loses its virulence, and that quarantine need not be continued for more than two weeks It cannot yet be decided just how long quarantine should be continued, but two weeks should be the under limit, and better, three weeks That more of the attendants or associates of a patient sick with poliomyelitis do not contract the disease may be because they are insusceptible, or they may have become immune from some previous abortive attack

There has not yet been produced an antiserum, although it is most sincerely hoped that Flexner and his co-workers will be able to add such a serum to the list of their splendid achievements With our better knowledge of the action of hexamethylenamin, we cannot expect germicidal activity in the cerebrospinal fluid, which is alkaline It has been shown that this drug has no germicidal activities, except in an acid medium, and, therefore, it is of special value only in infections of the pelvis of the kidney, ureters, bladder and urethra, and then only when the urine is acid Hence, when the disease has started, there is no known medical method of aborting it, although mild infections may abort without paralysis

The treatment in this stage of the disease is to relieve cerebral and spinal congestion and remove all possible toxins that may be absorbed from the intestinal canal by free but gentle catharsis Calomel, in one sufficient dose, associated with cascara, aloin or rhubarb, as deemed advisable, is always a good method of treatment Castor oil is another, or at times a quickly acting saline cathartic may be advisable Subsequently the bowels should be moved as frequently as the diet and the condition of the intestines seem to require A child that is not taking much food for the first two or three days after the first cleaning out of the intestines need not necessarily be bothered with a laxative every day during this first stage of the disease As soon as paralysis begins, it may be difficult to cause the bowels to move, and a simple glycerin suppository or a small enema may be needed

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[9] Koplik H An Epidemic of Acute Poliomyelitis Arch Pediat May 1909 p 321

[10] Flexner Simon The Mode of Infection in Epidemic Poliomyelitis The Journal A M A., Oct. 12 1912, p 1371

[11] Lucas William P and Osgood Robert B Transmission Experiments with the Virus of Poliomyelitis, The Journal A M A., May 24 1913 p 1611

[12] Kling Carl The Etiology of Epidemic Poliomyelitis Wien klin. Wchnschr Jan 10 1913 p 41

The child must not be allowed to forget to urinate, as some loss of normal bladder irritability may allow urine to be retained and distention of the bladder to occur Therefore, the child should be encouraged to urinate at about four-hour intervals Of course, if the urine cannot be passed, it must be drawn

Generally the fever is not high If it is high, two or three small doses of acetanilid may be administered, or sponging the body with warm water is advisable General cold sponging or general cold applications are inadvisable, as tending to cause increased congestion of the central nervous system The value of an ice cap as a reducer of temperature is doubtful, and it is likely to cause the child to become more restless The value of a spinal ice bag is also doubtful, as many times these cold applications cause an increase of pain

Pain must be stopped in a child as well as in an adult, this fact is often forgotten The physician allows a child to suffer because he dislikes to give strong narcotics, when an adult would demand something to stop his pain If there is high fever and a few doses of acetanilid have been given, this may prevent some of the pain, but pain is most safely combated by small doses of morphin, codein, or opium in some form Perhaps there is no better method of giving this narcotic drug to a child than by means of the deodorized tincture of opium The dose may be, even to a young child, one drop every hour for five hours until the child is sleeping or is quiet If the child is very young, of course the dose should be less, and for a child 10 years of age the dose should be larger If the brain is so affected that the child is stupid, pain is not much felt, and narcotics will not be needed Unless the child is excessively nervous, restless, sleepless, and twitching and jerking about the bed, such cerebrospinal depressants as chloral and bromid are not indicated, as one can but feel they might tend to increase the muscle debility and paralysis that must follow the acute stage of the disease It seems safer and more rational to give for this condition opium or one of its alkaloids in a dose sufficient to cause quiet and rest

In this disease, as in all forms of meningitis, the bedroom should be quiet and removed as far as possible from all noise and disturbance The child should not be unnecessarily spoken to, and there should be frequent darkening of the room in order that the patient may get all the rest possible

During the active stage food should not be pushed Part of the diet should be milk, and the rest of it should be cereal gruels The diet should not be wholly milk, for in this as in all acute diseases the possibility of acidemic conditions occurring should not be forgotten, and starches should always be given in the form most acceptable to the patient The first day or two the child will be thirsty, and should be allowed all the water it desires As soon as the fever diminishes or ceases, nutrition should be pushed, and the child should be encouraged to eat so that the general strength may be recovered as rapidly as possible If at this time the tongue is coated, the digestion poor and the appetite insufficient, it may be because gastric acidity is insufficient, and a few drops (not more than five) of dilute hydrochloric acid, in water, after meals, may aid in overcoming these conditions

B *Local Treatment*—Fixation of the painful extremities and of the back, in the most restful position, with the aid of cushions and pillows, is important during the acute stage As there is no special inflammation in any joint or muscle, cold or ice to a painful region is not indicated Dry warmth may cause a lessening of the pain and is often of value If the limbs affected become cold from disturbed circulation, they should be surrounded with cotton or covered with flannel Restriction by bandages is inadvisable

The pathologic lesions of the disease may be studied in an article by Flexner, Clark and Amoss[13] Several years ago Lovett and Lucas[14] studied 635 cases of infantile paralysis, and came to the conclusion that paralysis of one leg was nearly four times more frequent than paralysis of both legs, and paralysis of an arm and leg of one side was more common than was a crossed paralysis The internal muscles of an extremity were more frequently affected than the external, and the anterior than the posterior The most common muscle to be affected in the leg they found to be the quadriceps, the next in frequency was the tibialis anticus and anterior muscles of the lower leg If the hamstring muscles were affected it was more often the internal than the external, and the sartorius muscle they found frequently not to be affected even when the quadriceps was They found the internal rotators of the thigh more frequently affected than the external rotators, and the adductors more frequently than the abductors The short toe flexors they found the least likely to be affected In the upper extremity, the arm is more frequently affected than the forearm, and the deltoid the muscle most affected, although the biceps, triceps and scapular muscles may also be affected

During the first stages of the paralysis great care must be taken in watching the position of the limbs especially the legs, to prevent contractions caused by the pulling of the unaffected muscles Massage is soon valuable, but must be very gentle Proper massage will not only increase the nutrition of the affected muscles, but cause relaxation of spasm of the unaffected muscles It may be necessary to devise some apparatus to keep the leg or foot from becoming deformed For this purpose various splints, or wooden or wire troughs properly padded with cotton may be used Gibney and Wallace[15] urge that the legs should be kept straight or in slight flexion at the knees and in line with the body, while the feet should be kept at right angles with the legs

The value of having the child, as early as possible, make slight voluntary efforts with the paralyzed muscles is excessively important All neurologists and orthopedists now believe that one voluntary contraction of a muscle is of very much greater value than many passive activities of a muscle or contractions caused by electricity or other irritant

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[13] Flexner, S Clark P F, and Amoss, L Epidemiology of Poliomyelitis, Jour Exper Med, Feb 1, 1914

[14] Lovett, Robert W, and Lucas W P Infantile Paralysis A Study of 635 Cases with Especial Reference to Treatment, The Journal A M A, Nov 14, 1908, p 1677

[15] Gibney, V P, and Wallace, Charlton The Recent Epidemic of Poliomyelitis, The Journal A M A, Dec 21, 1907, p 2082

Some writers believe that counterirritants applied to the spine, such as cautery treatments, are of value in hastening the stage of resolution of this disease While they may be of value, consideration must always be given to the disturbance that it will cause the child who has suffered enough pain, and who already has difficulty in finding comfortable positions in bed

C Paralysis—When the circulation is poor in an extremity, the local application of heat in any form, and perhaps by baking, is of value As soon as it is believed that all active inflammation in the spinal cord has ceased, electricity should be begun, and Jones[16] believes that electricity should not be used until from three to eight weeks from the beginning of the infection Galvanism should then be used on the nerve trunks, gently and not too strong, while the muscles are caused to contract by faradism as long as they react to that current If they do not react to the faradic current, the galvanic current should be used to cause contraction by making and breaking The rapidity of the making and breaking galvanic current should not be too great, nor should any kind of muscle stimulation be continued too long at any one sitting, in fact, at first only a few contractions should be caused

Voluntary training directed by a skilled orthopedist, and the application of any splints or apparatus that may be necessary to prevent deformities and atrophies should soon be inaugurated, as Taylor[17] and many others believe that massage and electricity are very ineffective in causing recovery of muscles paralyzed by poliomyelitis All physicians and surgeons urge that the greatest improvement is caused by plenty of rest in bed, graded exercise, warm baths, good food and fresh air In other words, the better the nutrition the greater the improvement in the paralyzed muscles Muscles may even recover after a year or more of paralysis when treated by a skilled orthopedist It should be emphasized that rough, harsh massage and misdirected use of electricity may do serious harm to the paralyzed and contracted muscles In a word, the general practitioner should as quickly seek the aid of the orthopedist in treating the paralysis of this disease as he would seek a skilled aurist in an internal or middle-ear inflammation

Surgical repair of deformities that cannot be corrected by apparatus or muscle training has now reached a stage never equaled before, and tendon transplantation and other orthopedic operative measures cannot too soon be considered when improvement ceases to occur in a limb affected with paralysis from poliomyelitis

Lovett[18] reported an investigation of 293 cases which occurred in the Vermont epidemic during the fall of 1914 In that epidemic the muscles of the limbs nearest the trunk were more frequently affected than the distal ones—the left arm muscles more frequently than the right The muscles in the right and left leg were equally affected From his investigation Lovett believes that much smaller degrees of overuse may be more deleterious than is generally supposed In the early stage of returning power exceptional care should be taken in the use of muscles in walking and in the use of heavy and prolonged massage The proportion of total to partial paralysis is greatest in muscles which have the greatest weight to oppose in standing and walking positions and least in those which have the least weight Meara[19] summarized therapy for the prevention of paralysis as follows

> "The essence of the therapy is rest of function of the affected parts and hence, the inflamed cord centers supplying those parts Rest means not only a comfortable bed, careful nursing, devices to find comfortable positions for the painful members, but also freedom from excitement, entertainment and visitors and, particularly, avoidance of pernicious measures of mechanico- or electro-therapeutics, often insisted on by the parents in an eagerness to see something done for the condition"

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[16] Jones R Infantile Paralysis (Acute Anterior Poliomyelitis) Its Early Treatment and Surgical Means for Alleviation of Deformities Brit Med Jour, May 30 1914 abstr, THE JOURNAL A. M A July 4 1914 p 63

[17] Taylor H L The Management of Poliomyelitis and Its Sequelae Med Rec New York, Oct. 15 1910 abstr, THE JOURNAL A. M A Oct 29 1910 p 1590

[18] Lovett R W The Treatment of Infantile Paralysis THE JOURNAL A M A June 26 1915 p 2118

[19] Meara F S The Treatment of Acute Infectious Diseases 1916 p 364

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SATURDAY, JULY 8, 1916

THE SIGNIFICANCE OF NITRATES IN HUMAN URINE

Combined nitrogen, it has been well said, is the common capital of the living kingdom. In an environment like that of the earth's surface, with an atmosphere of which free nitrogen constitutes four fifths of the gases, the element can nevertheless be taken up by most plants in the form only of ammonia, nitrites or nitrates. To animals even these compounds have appeared to be useless, and the only source of nitrogen to this class of living organisms, which includes man, has seemed to be the protein which has been built up by the agency of the plant cells. It has not been easy to dispose of the possibility that gaseous or elementary nitrogen may play a part in the processes of animal metabolism. The careful experiments of Oppenheimer[1] and Krogh[2] have at length demonstrated conclusively, however, that no nitrogen is eliminated in the free state from the body and that the earlier claims of positive findings were based on experimental errors.

The question of the metabolic significance of nitrites and nitrates has not been so readily settled. Not only has the possibility of the assimilation of nitrogen in the form of ammonium salts provoked discussion,[3] but also the availability of nitrates for constructive purposes in mammalian metabolism has been seriously suggested. The increasing recognition of fundamental biologic similarities in the chemical processes of plants and animals has contributed to the promotion of such a hypothesis, for it often seems as if the real difference between these two groups of living forms were a quantitative rather than a qualitative one. Why, then, should animal forms not be able to utilize nitrates in some degree? Not to venture a final word, the consensus of opinion indicates that although nitrates may influence the progress of nitrogenous metabolism, they do not enter into constructive processes. Ingested nitrates can be recovered quantitatively in the excreta.[4]

Although nitrates cannot enter into the constructive processes of the higher animals, it by no means follows that they never represent the end-products of nitrogenous metabolism in these species. Human urine, as well as that of animals, has long been known to contain nitrates under ordinary conditions of living. Calculated as the potassium salt, the quantity is represented by amounts varying from 100 to even 400 mg per liter (quart). The wide distribution of nitrates in food materials, especially in fresh vegetables,[5] has quite naturally led to the supposition that the urinary nitrates have their sole origin in the food consumed. Obviously the solution of this problem became a matter of exact determinations of the nitrate "balance" of the organism. An elaborate research[6] in the Department of Animal Husbandry at the University of Illinois in Urbana has indicated, in most cases beyond reasonable doubt, that the animal body may excrete in the urine more nitrate than is ingested in the food. The marked differences between the determined nitrate intake and nitrate excretion cannot be accounted for by differences in the accuracy of the analytic methods as applied to foods and to urine.

It is conceivable that nitric and nitrous acids in the air may gain access to the blood by way of the lungs and thus ultimately reach the urine. This explanation of the source of the excess of nitrate appearing in the urine over the nitrate ingested with the food is excluded, however, by a consideration of the maximum quantity of nitrate which could be formed in this way, even if the lungs were readily permeable to the nitric fumes. From Mabery's[7] figures obtained by analyses of samples of air taken at Cleveland, it may be shown that the total quantity of nitric acid which would be introduced into the lungs per day, on the assumption that the the tidal air is 500 c.c. and the respiration rate 20 per minute, would average about 5 mg., the maximum being 15.3 mg. The quantity of nitrous acid inhaled is entirely negligible.

The alternative explanation is that the body tissues are able to produce nitrates from unoxidized nitrogenous radicals. The Illinois investigators remark that the problem is of peculiar theoretical interest, since the production of an oxidized nitrogenous product by animal tissues would be unique. The ordinary end-products of nitrogenous metabolism — urea, uric acid, creatinin, ammonium salts, etc. — are of quite different type. Nevertheless Mitchell, Shonle and Grindley believe that the production of nitrates by animal tissues is a fact and is unique in being the only well established instance of the oxidation of nitrogen, aside from the conversion of nitrites to nitrates, which is apparently a reversible reaction Pending the permanent solution of the fundamental question here involved it would, as they say further, be mere speculation to attempt a theory of the manner in which this oxidation is accomplished, of the intermediate products formed, of the particular organ responsible for it if its production is at all localized, or of the biologic significance of the process

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[1] Oppenheimer, C.: Ueber die Anteilnahme des elementaren Stickstoffes am Stoffwechsel der Tiere, Biochem. Ztschr., 1906, i, 177; Ueber die Frage der Anteilnahme elementaren Stickstoffs am Stoffwechsel der Tiere, ibid., 1907, ix, 328.

[2] Krogh, A.: Sitzungsb. d. Wien. Akad., 1906, cxv, (3).

[3] Underhill, F. P., and Goldschmidt, S.: Studies on the Metabolism of Ammonium Salts, III, The Utilization of Ammonium Salts with a Non Nitrogenous Diet, Jour. Biol. Chem., 1913, xv, 341.

[4] Abderhalden, E.: Lehrbuch der physiologische Chemie, 1915, ii, 1216.

[5] Richardson, W. D.: Jour. Am. Chem. Soc., 1907, xxix, 1757.

[6] Mitchell, H. H.; Shonle, H. A., and Grindley, H. S.: The Origin of the Nitrates in the Urine, Jour. Biol. Chem., 1916, xxiv, 461.

[7] Mabery, C. F.: Jour. Am. Chem. Soc., 1895, xvii, 105.

IS CANCER OF INFECTIOUS NATURE?

Malignant new growths are found in various classes of the animal kingdom and seemingly also in plants Although cancers were recognized and treated surgically by Galen, the modern conception arose only with the discoveries of Virchow in 1853 and the theory of Cohnheim in 1867 Since that time innumerable workers have approached the problem of cancer from every angle The clinical symptoms, the gross and microscopic anatomy, the rate and manner of growth, the production of metastases, the chemical changes produced, and their biologic aspects in general have been thoroughly investigated Little concerning many of these phases remains to be discovered, but of their cause little indeed is known The theory of Cohnheim remained the most tenable until recent years At various times, bodies have been found in cancer which were interpreted as protozoa, bacteria or yeasts The failure to cultivate these bodies, together with the demonstration that they were most likely products of degenerative changes, and other reasons, led to the conclusion that they were not etiologic factors Recent evidence concerning the infectious origin of cancer has been discussed in these pages[1] What seems to be important evidence in favor of the parasitic theory is being brought forward by Erwin F Smith, pathologist of the Laboratory of Plant Pathology, Bureau of Plant Industry, U S Department of Agriculture[2]

For a number of years he has been studying crown gall of plants Crown gall is a growth occurring in many plants It is a new growth in which many characteristics typical of cancer in man are found, namely, (1) the vegetative (embryonic) character of the cells, (2) the rapidity of growth, (3) the peripheral extension, lack of capsule and infiltration of surrounding tissue, (4) the tendency to central degenerative changes, (5) the liability to recurrence after removal, (6) the cachexia, and (7) the tendency to develop metastases in which is reproduced the cell complex of the primary tumor By means of ingenious staining and cultural methods, an organism has been found and isolated in pure culture which fulfils Koch's postulates for a specific organism This is called *Bacterium tumefaciens* By means of inoculation, growths resembling the original are produced Now further experiments appear to show that growths resembling sarcoma, carcinoma and epithelioma, mixed tumor, and embryoma (teratoma) can be produced according to the part of the plant and the age of the plant inoculated Thus sarcoma is formed when the bacterium is introduced into the connective tissue of young plants or well nourished actively growing parts of older plants Carcinoma and epithelioma develop when the epithelial tissue is inoculated Perhaps the most striking result is the development of embryoma By the inoculation of *Bacterium tumefaciens* into the vicinity of growing buds, growths containing all the primary germ layers are produced Smith explains this in the following manner "The bud anlage is torn to fragments by the rapidly growing tumor and these fragments are variously distributed and oriented in the tumor where under the stimulus of the parasite they grow into abortive organs" Teratoma is produced also in the leaves of young tobacco plants where no dormant buds are known to exist Smith explains this by the assumption that certain widely distributed normally arranged cells or groups of cells, and possibly all cells when very young and plastic, carry the potentiality of the whole organism, which potentiality is not ordinarily developed on account of division of labor, but comes into action when the physiologic control is disturbed or destroyed Teratoma is produced in tobacco leaves only by inoculating very young leaves When older leaves are inoculated they either do not respond, or yield only the ordinary crown galls

Smith's hypothesis of the action of the organism is as follows[3]

> "The micro-organism, entering the cells as the result of slight wounds, grows rapidly for a short time Its growth is then inhibited apparently by its own by-products As the result of this inhibition many of the bacterial rods swell, becoming clumpy and variously branched, giving rise to the so-called Y bodies There then ensues death for many, and a dormant period for the remainder The organisms which are killed outright, by the by-products evolved during their previous growth in the cell, are the ones which now stimulate the nucleus to development This I conceive to take place by endotoxins or other substances As soon as the nucleus begins to divide, its membrane disappears, and its contents flow into the cell,   the benumbed bacteria take on new growth and pass over into the daughter cells" where the process is repeated

Inoculation of the organism into brook trout produced small nodular growths at the point of inoculation, but the fish died before it could be determined whether or not the growths were malignant in structure

To recapitulate Crown gall, according to Smith a cancer of plants, is due to a bacterial organism (*Bacterium tumefaciens*) Pure cultures of the organism when inoculated into plants produce sarcoma, carcinoma and epithelioma, mixed tumor and embryoma, depending on the part of the plant inoculated and the age of the plant

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[1] Infectious (?) Cancers in Animals editorial The Journal A M A March 11 1916 p 816

[2] Smith E F Jour Cancer Research 1916 i 231 Science 1916, xliii 871

[3] Smith Proc. Seventeenth Internat. Cong Med Section III

These results upset our orthodox views concerning cancers That sarcomas, carcinomas and embryomas are due to the same organism would seem scarcely possible, yet certainly they are no more dissimilar than a hunterian chancre, a rupioid syphiloderm, a gumma or the degenerative processes of general paresis Perhaps a Koch or a Schaudinn will appear, and by new and ingenious methods demonstrate the essential unity of cancers in man The work of Smith would seem to indicate such a possibility For the present it would seem that the statement made in a previous review of Smith's interesting work on new growths in plants still holds good [4]

> If it becomes necessary to adopt the view advanced by Smith that the crown gall he has studied with such success is a true cancer, then to him will belong the credit of having discovered first the precise cause of a cancerous growth On account of the absence of complete analogy between the structure of plants and that of animals (and the fundamental difference in metabolism), the question whether crown gall is a cancer or not in the ordinary sense of the word would seem to be a difficult one to settle at this time, but Smith makes out a very strong case in favor of his view, and we must acknowledge that the view of the infectious cause of cancer in general is strengthened by his work

THE ASSIMILATION OF FATS

Progress in the study of the metabolism of foodstuffs in the organism has shown that the chemical changes leading to a liberation of energy from the ingested nutrients are not so simple as was once supposed Instead of merely accomplishing solution, the processes in the alimentary tract bring about extensive cleavage of the foodstuffs prior to their absorption from the gastro-intestinal canal This profound disintegration of the ingested substances as a preparation for their subsequent rôle in the metabolism was scarcely suspected even a few years ago It has long been obvious that the fats taken with the food, if not immediately required for the energy needs of the body, may be laid down without change in the adipose tissues as well as in the other cells of the body, but to state, as one recent writer does, that the mechanisms involved in the translation of fat from the alimentary canal to the tissues are of the simplest possible description, and involve changes only of hydrolysis and dehydrolysis, perhaps obscures some of the difficulties which the matter of fat transport presents

Physiologists are now inclined to locate the actual metabolism of the foodstuffs, or their digestion derivatives, in the tissue cells How and in what form do the products which undergo metabolism and contribute to energy exchange reach these cells? The carbohydrate travels as glucose in the blood stream The amino acids derived from the proteins were once thought to be deaminized on their way into the general circulation, but more recent evidence indicates that they are actually carried as such in the blood and distributed widely in the organism [1] The limitations of knowledge with regard to the transport of the fats to their depots and combustion centers may be veiled by saying that these foodstuffs are hydrolyzed within the intestine and resynthesized to a certain extent in the passage into the circulation Part of the absorbed fat enters the thoracic duct as chyle and is thus discharged into the blood stream at the jugular vein At least two thirds of the ingested fat may ordinarily be accounted for in that way, and this has furnished the justification for the belief in the resynthesis of neutral fat during the act of absorption from the intestine Not all the reabsorbed fat is to be found in the chyle The fate of the remnant is not clear It may reach the blood stream directly by way of the intestinal capillaries and thus find its way to the liver, it may even be used up in the mucous epithelium of the alimentary canal

Decidedly more uncertain are the details of the subsequent travel of the fats from the time they enter the blood stream until they reach that stage of chemical transformation which converts them into new and different products of metabolism How the blood fat finds its exit from the blood, says Mathews,[2] how it gets through the vascular wall, whether by being split into soaps and glycerol or as a neutral fat, and how it is accumulated in the fat tissues, are problems not as yet solved There is a lipase in the red blood corpuscles, and perhaps all the blood fat is rehydrolyzed before leaving the blood Into this field of physiologic uncertainty the researches of Bloor[3] of the Harvard Medical School have brought new suggestions He remarks that ever since the chemical similarity between lecithin and the fats was discovered, attempts have been made to connect the two in metabolism, but although there has been much speculation, no definite evidence has been offered In fact, lecithin has been generally classed as a cytolipoid, having to do more with the structure of the cell than with its processes However, the idea that there is a dynamic relation between lecithin and fat in normal metabolism has been a persistent one, and has continued to stimulate investigation, so that recently evidence has been brought forward definitely connecting the two The evidence consisted of fat absorption experiments in which it was found that lecithin increased in the blood during the absorption of the fats

Equipped with improved and refined methods of analysis to which he has of late devoted much attention,[4] Bloor has attempted to locate the seat of formation of the lecithin This substance is found unquestionably augmented in the blood while fat is being absorbed During the course of this process it was found that total fatty acids increase in both plasma and corpuscles, but the increase is generally more marked in the corpuscles Lecithin increases greatly in the corpuscles but only slightly in the plasma No definite changes in the quantity of cholesterol were noted A fairly constant relationship between total fatty acids and lecithin was noted in whole blood and corpuscles This constancy, Bloor believes, may be taken as evidence that all the absorbed fat passes through the lecithin stage, and that therefore lecithin is to be regarded as the first stage in fat metabolism

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[4] Is Cancer of Infectious Nature? editorial, The Journal A M A, Aug 10, 1912, p 448

[1] The Paths of Absorption for Amino Acids, Current Comment The Journal A M A, July 5, 1913, p 46, In What Form Are Protein Digestion Products Absorbed? editorial, Dec 20, 1913, p 2245 The Amino Acids in the Blood, Current Comment, Feb 21, 1914, p 621 Amino Acids and Tumor Tissue, Oct 16, 1915, p 1373 A valuable account of the behavior of the amino acids will be found by Underhill, F P The Physiology of the Amino Acids New Haven, 1915

[2] Mathews, A P Physiological Chemistry, New York, 1915, p 453

[3] Bloor, W R Fat Assimilation, Jour Biol Chem, 1916, xxiv, 447

If it is justifiable to conclude that the blood corpuscles take up the fat from the plasma and transform it into lecithin, and that most if not all of the absorbed fat is so transformed, it follows from Bloor's standpoint that the hitherto unexplainable anatomic mechanism (thoracic duct) by which the fats are thrown directly into the blood stream and thoroughly mixed with the blood in the heart and lungs before they reach any of the organs of intermediate metabolism (as the liver) may be explained on the basis of the foregoing results Since the first step in the metabolism of the fats takes place in the blood corpuscles, it is to be expected that they will be given an opportunity to take up as much of the fat as possible before it comes in contact with the organs and tissues

Further interesting speculations of Bloor concern the unsolved question as to which of the blood cells — red or white — take the predominating part in this unique lecithin formation It has long been known that during fat absorption the white blood cells in the intestinal lymph spaces become loaded with fat and apparently take an active part in the absorption, so that the idea would occur to many that the white cells were responsible for the lecithin increase in the blood In view of the fact that they constitute less than 0 5 per cent of the total blood cells, however, it would seem to be physically impossible for them to transform the relatively great amount of fat taken into the blood during a fat meal It is quite unlikely, on the other hand, that the lecithin formation is limited to the blood cells Esterases have been found in many tissues, and it is probable that the circulating fat is removed from the blood stream and worked up by many types of fixed cell in the same way as it is done by the blood cells

Those who have followed the discussions of the recent physiology of the red blood corpuscles from time to time in THE JOURNAL must have been impressed by the rapid expansion of our information in regard to these cells, which were once merely regarded as more or less inert carriers of oxygen Today we know them to be laden with sugar and amino acids, like other body cells, and now the evolution of the products of fat metamorphosis has likewise been discovered to constitute a presumable part of their varied functions

A REPORT ON NUTRITION IN A GERMAN INTERNMENT CAMP

War, with its unexpected emergencies and unique demands, with the sudden needs of maintaining large groups of persons in health and strength under unanticipated conditions, has always presented serious problems of food supply and adequate nutrition on a large scale The European nations are affording instances of this at the present time The ingenuities and exigencies of nutrition have more than once been brought to light by a study of the management of civil populations in times of siege and in prison camps, as well as in the field It is instructive to ascertain how unanticipated situations are met and what are the conditions that need to be combated in a nation left largely to its own limited resources in matters of diet in times of stress

Particular value attaches, therefore, to observations by an unbiased, competent observer on the conditions of diet and nutrition in the camp of the interned British civilians at Ruhleben, Germany The report submitted successively through the United States ambassadors at Berlin and London, to the British Secretary of State for Foreign Affairs, has been published as a white paper[1] Its author, A E Taylor of the University of Pennsylvania, visited the camp, where he found a total number of 3,700 persons interned As a criterion of what should constitute a complete, sufficient and normal diet for such persons, Taylor presents certain dicta which deserve to be repeated in view of their widespread significance, particularly at the present time

1 The diet must contain protein sufficient in amount and representative in component amino acids to maintain the tissues and cells of the body in a state of normal composition and function Taking into account the extensive investigation of the past few years on the protein requirement of man, it is stated that from 70 to 90 gm of protein per day are fully competent to maintain normal nutrition in the adult male (not engaged in hard work), provided the proteins offer the body all the needed amino acids, and the diet is rich in carbohydrate

2 The diet must contain an amount of fuel sufficient to furnish at least 30 calories per kilogram per

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[4] Bloor W R Jour Biol Chem 1915 xxiii 317 and earlier papers

[1] Report by Dr A E Taylor on the Conditions of Diet and Nutrition in the Internment Camp at Ruhleben received through the United States Ambassador Miscellaneous No 18 1916

day This fuel ought to be largely in the form of carbohydrate The calories specified are needed for the body at rest or under light exercise only If the body works, the input of fuel must rise to a value of 3,000 or more calories, depending on the severity of the work This rule of the German authorities dealing with military prisoners runs at present to the effect that prisoners who work are to receive 10 per cent more in calories than prisoners living in camp

3 The diet must contain a certain amount of native fat Extensive investigations in the nutrition of growing animals have indicated that a certain minimal fat content is indispensable in a diet It is not known just how much fat is required to cover this factor, and we are therefore not in a position to fix the minimal fat content of a normal diet Roughly speaking, it is believed that a ration should contain at least 25 to 50 gm of fat per day In justification for this conclusion, Taylor points out that quite possibly the indispensable factor in fat does not lie in the tripalmitin, tristearin and triolein therein contained, but in other components (whose nature is not yet clearly understood) which are present in the various native fats General medical experience supports the view that nutrition is better maintained on protein, carbohydrate and fat than on protein and carbohydrate alone

4 The diet must contain the various salts required in the body

5 The diet must contain certain substances of unknown chemical nature which are at present grouped under the term "vitamins," and which are found especially in vegetables and in the coverings of grains It is possible that the indispensable factor in fats previously discussed is to be classed with the vitamins, when considered from the standpoint of a diet

6 A diet must not consist entirely of preserved or conserved foodstuffs A certain proportion of the articles of diet ought to be either freshly cooked or consumed raw

These conclusions, which are receiving widespread attention under the sanction of a British government report, are peculiarly interesting in the contrasts which they afford in several respects with what one might have expected to read a decade ago Energy and sufficient protein no longer form the sole desiderata that receive emphasis Suitable protein, accessories to the diet, salts, vitamins—in other words, the quality of the ration—is given special recognition by direct or implied reference Taylor also takes into account further criteria of a diet which, as he says, are much more difficult to elucidate and evaluate than are the basal requirements already stated In dealing with civilized man we are dealing with something more than the contemplation of the human subject as a living machine Some account needs to be taken of the habits, customs, tastes and idiosyncrasies of the subjects under consideration, and to the degree of refinement or specialization of their nervous systems The presentation of the physiology of nutrition is changing, indeed

According to the British white paper, the minimum food requirements are satisfied in the Ruhleben camp The British dislike the German cooking[2] There is widespread dissatisfaction with the German "black bread" furnished to British palates, and other items are not relished, yet making due allowance for the exigencies of the war and the psychologic effects of restriction under military control, the nutritive conditions remain endurable With one exception the different foodstuffs have been found to be of satisfactory quality The estimate as to its quantity indicated that for the number of men who partook of the camp rations, the average daily input for the week was 99 gm of protein, 25 gm of fat, and 252 gm of carbohydrate, corresponding to 2,740 calories If all the men in the camp had taken their numerical share of the food offered, the average daily input per man would have been 60 gm of protein, 13 gm of fat and 308 gm of carbohydrate, corresponding to 1,590 calories It must be noted, however, that considerable supplies in addition are furnished by friends, relief societies and other agencies, so that the average figures will be above the minimum just quoted The foremost criticism is that the food shipped in from Great Britain, like the food provided by the German authorities, is poor in fat and rich in starch

Taylor's recommendations contain the suggestion that the two sets of supplies—from Germany and from Great Britain—should be organized to supplement each other The proposed plan calls for from 80 to 90 gm of protein, about 65 gm of fat, and 425 gm of carbohydrate, and would yield about 2,600 calories Such a diet would contain the usual and desirable amount of fat, it would conform to the tastes of the prisoners, and it would provide the interned men with certain desired articles which the German authorities do not provide

Current Comment

THE RÔLE OF BOOKS IN SPREADING INFECTION

Libraries and school authorities in cities that supply children with books from a common stock, as well as those who use such books, should be interested in a recent laboratory investigation of books as possible vehicles of disease[3] In this investigation three approaches were made to the subject (1) an investigation of seventy-five soiled and torn library books that for several years had been passing through the hands of children who were living under most undesirable sanitary conditions, (2) a search for diphtheria bacilli on 150 books that were known to have been handled by persons ill with diphtheria, and (3) a study of books artificially contaminated with *Bacillus coli, B typhosus,* and *B diphtheriae* In the case of the seventy-five library books, the only organism found suggestive of danger was the colon bacillus in two instances only, here the fact is pointed out that *B typhosus* differs very little in viability from *B coli* and would, if lodged on a book, persist almost equally long The search for diphtheria bacilli on the 150 books handled by diphtheria patients failed to disclose the organism in a single instance In this connection the investigator adds the results of a brief and inconclusive study of books open to contamination with tuberculosis to the results of a more extensive investigation by Kenwood and Dove,[4] quoting them as follows "There is probably no material risk involved in the reissue of books recently read by consumptives, unless the books are obviously soiled Even then the risks are slight" The books artificially contaminated by rubbing them, inside and outside, with cotton swabs saturated with broth suspensions of the organisms studied, were held at room temperature under various conditions dry in diffuse daylight and moist in diffuse daylight, dry in darkness and moist in darkness, at low temperature, and exposed to direct sunlight It was found that *B coli, B typhosus* and *B diphtheriae* on the inside of books remained alive and virulent for months, and also on the outside of books when they were kept in the dark Exposed to diffuse daylight *B typhosus* and *B diphtheriae* survived not more than twelve days, while direct sunlight killed within a few hours It is clear that while in the course of natural contamination books do not offer a favorable ground for the lodgment and growth of bacteria, yet in view of the fact that *B typhosus* and *B diphtheriae* have been found alive and virulent after the lapse of months under the conditions mentioned, it would be safest if books handled by patients were thoroughly disinfected Direct sunlight appears to be as efficient and ready an agent here as elsewhere

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[2] See London Letter, this issue, p 131

[3] Laubach, C A The Possible Role of Books in the Dissemination of the Contagious Diseases, Bull Johns Hopkins Hosp, 1916, xxvii, 183

POLIOMYELITIS—INFANTILE PARALYSIS

Reports from New York indicate that that city is making desperate efforts to check a beginning epidemic of anterior poliomyelitis, probably the most severe in its onset of any that has threatened American communities In the summer and fall of 1913 several groups of cases of this disease appeared in California The field investigations were carried on by Sawyer,[5] who determined once more that this disease is transmitted by contact It was impossible to show any connection between the stable fly—formerly incriminated—and the cases which he observed In practically every instance infection could be explained on the theory that epidemic poliomyelitis is transmitted through contact from acute cases or carriers He showed also that the active virus may leave the body from the rectum as well as from the nose and mouth Precautions should be taken, therefore, in the care of poliomyelitis patients to prevent infection, not only from the nasal and buccal discharges, but also from the feces and soiled bedding Recently Flexner[6] summarized his views as to the etiology of this condition The microbic agent, he states, is present in the nasal and buccal secretions, carried by persons, not insects, and communicated by them in such a manner as to gain access to the upper respiratory mucous membranes of other persons Those who are susceptible to the injurious action of the virus acquire the infection and develop the disease Not all of them develop the paralytic or meningitic type Some represent abortive and ambulatory types All, however, become potential agents for the dissemination of the virus, as do also healthy persons who have been in intimate contact with those who are ill and others who have recovered from acute attacks of the disease The prevention of such dissemination is the actual prevention of the disease The treatment of the condition is at best unsatisfactory, and the restoration of function to paralyzed limbs is a difficult task[7] To repeat, prevention of this dangerous and crippling disease should be the primary object

RUSBY, A GOVERNMENT EXPERT, TESTIFIES

As might have been expected, the technical "experts" who came to the defense of Wine of Cardui were, with but few exceptions, men of little or no standing in their professions One of the exceptions was Dr Henry H Rusby of New York Rusby is a government official connected with the Department of Agriculture Some of our readers will remember him as the man whose employment was discussed in the so-called Wiley investigation This investigation went into the facts regarding the retaining of Rusby in the government service at a higher rate of remuneration than the law allowed, and Dr Rusby's suggestion that while he was on his vacation Dr Mansfield should be employed by the government as an unskilled laborer at $50 00 a month to do his (Rusby's) work Dr Rusby's exoneration in this case is, of course, a matter of record and was commented on in these pages This by the way For the present we would direct our readers to the testimony of Dr Rusby in the Wine of Cardui case Dr Rusby is a pharmacognosist His ability as a medical botanist few will question Apparently, however, he was willing to qualify also as a physician, although his experience in the practice of medicine seems practically to have been limited to one year's employment as clinical clerk in a lunatic asylum some thirty years ago This may help to explain Dr Rusby's weird conceptions of the anatomy of the female pelvis Dr Rusby was quite sure that Wine of Cardui would be "useful" as a "diuretic," as "a stimulant of intestinal action," as "a tonic and appetizer," as "beneficial to nutrition," and, last but not least, as "a stimulant to unstriped muscular fiber" Dr Rusby regarded such a mixture "as a uterine tonic" whose action would be

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[4] Kenwood H and Dove E The Risks from Tuberculosis Infection Retained in Books, Lancet London 1915 ii 66

[5] Sawyer, W A Epidemiologic Study of Poliomyelitis Am Jour Trop Dis and Prev Med September 1915

[6] Flexner Simon Mode of Infection and Etiology of Epidemic Poliomyelitis Am Jour Dis Child May 1915 p 353

[7] Therapeutics this issue p 118

[8] See page 135 this issue

"beneficial" in its general tendency "by increasing the nutrition of the muscles and toning the muscles up so that they would support the uterus better" It was brought out on cross examination that Dr Rusby was quite convinced that Wine of Cardui would act on the unstriped muscular fibers of the broad ligament! During the investigation of the Expenditures in the Department of Agriculture a letter of Dr Rusby's was put in evidence in which he deplored the fact that he had "only the degree of M D" In the same letter he stated that while he "never suggested such a thing nor even considered it," he had no doubt that he could "secure a degree from Columbia University" if it seemed "important from a departmental point of view" It might be suggested that when Dr Rusby gets back to Columbia University, where he is professor of materia medica in the College of Pharmacy, he ask a freshman student in the anatomy class to make a dissection of some of the unstriped muscles in the broad ligament

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST, SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC)

ILLINOIS

Soldier Medical Students Allowed Credit—The Illinois State Board of Health is said to have ruled, June 26, that all medical students who join the Illinois National Guard or Naval Reserve will be allowed full credit for the year's work

Northwestern Alumni Meet—At the annual meeting of the Alumni Association of Northwestern University Medical School, held in Chicago, June 10, Dr James H Stowell, Chicago, was elected president, and Dr Henry B Hemenway, Evanston, vice president The association recommended that a medical alumni advisory board be established to investigate conditions in the medical school

Personal—Dr Cora I Kipp, Pontiac, has recently returned after five years' service in Bareilly and Brindaban, India——Dr Howard K Scatliff, Elgin, is ill with smallpox at the Sherman Hospital——Dr Henry A Winter, Saybrook, celebrated his fiftieth anniversary of his entrance into practice, June 23——Dr Joseph Pogue, Edwardsville, who has been ill with pneumonia, is convalescent

Sanatorium Opened—The Rockford Municipal Tuberculosis Sanatorium was formally opened, June 10 Addresses were delivered by W H Smith, Rockford, on "The Relation of the Doctor to Community in the Prevention of Tuberculosis," and by Dr George W Webster, Chicago, on "The Rights and Duties of the Municipality in the Control of Tuberculosis" The presentation speech was made by Dr Daniel Lichty, its president, and Mayor Bennett accepted the institution on behalf of the city

Infantile Paralysis—Four cases of infantile paralysis were discovered in the Italian quarter of Standard, Putnam County, July 4 Steps were immediately taken to avoid the spread of the disease, and an investigation was started to trace the source of infection Dr C St Clair Drake, secretary of the state board of health, believes "that investigation will establish the fact that the outbreak of infantile paralysis among the Italians in both New York and Illinois, is more than mere coincidence"

Chicago

Physicians' Club Election—The Physicians' Club of Chicago, at its annual meeting, June 25 at the Hotel Sherman, elected Dr William D Napheys as secretary The directors elected for two years are Drs Arthur M Corwin, Henry W Cheney and John Weatherson The holdover directors are Drs Joseph Zeisler, Charles P Caldwell and Henry T Byford

On Watch for Infantile Paralysis—To guard against the entrance of infantile paralysis, which is epidemic in New York, into Chicago, the health commissioner, July 4, withdrew eighteen physicians of his staff from field work and placed them on duty to watch incoming trains from the east which might carry cases of the disease No cases had been reported when night came, but one family was placed under observation All babies on incoming trains who remain in Chicago will be watched for at least two weeks Plans have been made for a survey of the entire city for cases of infantile paralysis

Personal—Dr Arthur Lederer has resigned as chief chemist and bacteriologist of the sanitary district of Chicago, to take up the course for health officers at Harvard-Technology, Boston——The first five names on the eligible list of the City Civil Service Commission for attending physician at the Municipal Tuberculosis Sanatorium are Drs William D Napheys, Arrie Bamberger, Harry G Hardt, Ellis B Freilich and Philip J Murphy——Dr Hugh Neil MacKechnie has been appointed head of the department of surgery of Loyola University Medical School, vice Dr John D Robertson, resigned

IOWA

Personal—Dr Max W Emert, Des Moines, has been appointed assistant in surgery of the University of Nebraska and has located in Omaha——Dr Oliver W Boatman has succeeded Dr Edward J Wehman as city physician and health officer of Burlington

New Member of National Board—At its business meeting, held in Detroit, June 14, the National Board of Medical Examiners elected Dr Walter L Bierring, Des Moines, as a member of the board to fill the vacancy caused by the death of Dr William L Rodman

Clinical Society Organized—June 6, the Iowa Clinical Medical Society was organized at Des Moines by men interested particularly in internal medicine and diagnosis The following officers were elected president, Dr Granville N Ryan, Des Moines, vice presidents, Drs C Palmer Howard, Iowa City, and John W Shuman, Sioux City, and secretary-treasurer, Dr Guthrie McConnell, Waterloo The next meeting will be held in Sioux City, September 2

KANSAS

Hospital Officials Meet—At the annual meeting of the Kansas Hospital Association, the following officers were elected president, Dr Samuel Murdock, Jr, Sabetha, vice presidents, Drs Frank W Shelton, Independence, John C Hall, McPherson, and George W Jones, Lawrence, and secretary-treasurer, Dr William R Dillingham, Halstead

Personal—At the annual meeting for organization of the Kansas Board of Medical Registration and Examination at Topeka, June 14, Dr George M Gray, Kansas City, was elected president, and Dr Henry A Dykes, Lebanon, was reelected secretary——The orders directing Lieut John W Turner, M R C, U S Army, to Fort Sam Houston, take away the last medical officer from Fort Riley, and Dr John E Hewitt, M R C, Wakefield, has been ordered to report for duty at Fort Riley——At the annual meeting of the state board of health, Dr Charles H Ewing, Larned, was elected president, and Dr Samuel J Crumbine, Topeka, was reelected secretary for four years The advisory board, composed of Dr Sara E Greenfield, Topeka, bacteriologist, and Prof C A Haskins, engineer, and Joseph Welker and Francis Veatch, both of Lawrence, assistant engineers, were also reelected——Dr John W Young, Hutchinson, sailed with his family from San Francisco for Manila, June 10 He will be engaged in medical missionary work in the Philippines for three years——Dr Oscar F Marcotte, Topeka, has succeeded Dr John H Rinehart, resigned, as coroner of Shawnee County

MARYLAND

Hopkins Seeking Land—A large block of property immediately east of the present buildings is being sought by the trustees of the Johns Hopkins Hospital for extension of the hospital The ground is to be utilized for new buildings made necessary by the recent Rockefeller Foundation gift for hygiene research and by other gifts and legacies

University of Maryland Men Control Medical Corps—The regimental hospital corps of the Maryland National Guard is composed entirely of graduates of the University of Maryland, as follows Majors Robert P Bay, S Griffith Davis, Jr, J Harry Ullrich, all of Baltimore, and Henry A

Mitchell Elkton Captains G Milton Linthicum Herbert Schoenrich, Frederick H Vinup, William H Daniels, William J Coleman, Baltimore, Jacob C Madara, Ridgely, Clarence P Erkenbrack and John C Stansbury, Baltimore Lieutenants Paul Hutton Charles W Rauschenbach, May, George W Rice John S Fenby, William R Johnson, Caldwell Woodruff Hyattsville and Louis Diener

Personal—Dr Henry Lee Smith, Baltimore, a member of the Medical Reserve Corps of the United States Army has been ordered to Mount Gretna, Pa He will be one of the medical officers to examine the Pennsylvania troops——Dr L. Palmer Holmes chief admitting physician to the Johns Hopkins Hospital has left for a month's vacation in Arizona and San Antonio Texas where he will visit the United States Army headquarters——Dr George G Snarr has been reappointed medical superintendent of the Franklin Square Hospital Baltimore——Dr Charles R Foutz has has been appointed health officer of Westminster——Dr Frederick N Tannar Baltimore who was operated on at the Franklin Square Hospital recently, is reported to be convalescent

Base Hospital Forming—In the event of war, the American Red Cross and the Maryland War Relief Auxiliary have agreed on the immediate need of the establishment of a base hospital The staff of the hospital has been completely organized The surgeons, physicians nurses orderlies and litter bearers etc., have all been recruited in Maryland the total number required to man the unit being approximately 250 persons All that is lacking is the equipment, and to provide this, it will require about $30 000 The personnel of the staff is as follows

Dr Winford H Smith Baltimore director Dr George H Walker Baltimore adjutant Dr Victor F Cullen State Sanatorium quarter master Dr Walter A Baetjer, Baltimore, register and Miss Bessie Baker, superintendent of nurses

Surgical Division Dr John M T Finney, surgeon in chief Dr William S Baer Dr William A Fisher Jr, Dr J Staige Davis Dr Henry N Shaw Dr George J Heuer and Dr Bertram M Bernheim assistants all of Baltimore

Medical Division Dr Theodore C Janeway Jr physician in chief Dr Paul W Clough Dr Charles M Byrnes Dr Eveleth W Bridgman Dr John H King Dr William M Happ and Dr Verne R Mason, all of Baltimore.

Laboratory Division Dr Thomas R Boggs chief

Roentgen Ray Specialist Dr Charles A Waters

Pathologist Dr Montrose T Burrows

Dentist Dr A P Dixon Cumberland Md

Pharmacists Dr D P Craumer and W M Rodgick

Chaplain Rev Dr John McDowell

MONTANA

Tuberculosis Association Organized—The Montana Association for the Prevention of Tuberculosis was organized at a meeting held in Helena, June 23, at which addresses were made by Charles M DeForest, field secretary of the National Association for the Study and Prevention of Tuberculosis, and P A Surg A J Lanza, U S P H S, who is making a tuberculosis survey among miners of the state——The Butte Tuberculosis Society filed articles of incorporation, May 24

Hospital News—The movement has been organized for the construction of the Butte Deaconess Hospital to cost $100,000 The hospital will be for the public and an advisory board of physicians of the city will be maintained——Before August 1, a hospital pavilion at the State Sanitarium Galen, will be ready which will accommodate thirty additional patients Work will be started in the near future on a new kitchen and dining room for the new institution——Work has been started on the construction of the new hospital for Custer County which is to be built at a cost of about $40,000 The hospital will contain thirty rooms——A contract has been awarded for the erection of a thirty-room hospital in Conrad, to cost about $13 000 The building will accommodate when completed, about fifty patients and will be in charge of Dr Henry W Powers——A new private hospital is to be built in Anaconda with accommodations for thirty patients

NEW YORK

Personal—Dr Franklin W Barrows, Buffalo has been appointed acting chief of the Bureau of Child Hygiene Department of Health during the absence of Dr Arthur C Schaefer who has been called to duty with the Seventy-Fourth New York Infantry——At the meeting of the Binghamton Academy of Medicine June 19 a loving cup was presented to Dr John H Martin, by the Academy as a token of respect and affection——Dr Charles J Garofalo Syracuse has been commissioned captain in the Canadian Army Medical Corps and has reported for duty at Kingston, Ont

New York City

Sore Throats Among Guardsmen—It is reported that fifteen privates of Company L, Forty-Seventh Regiment of Brooklyn, are ill with sore throats and have been isolated in the regimental hospital

Personal—At the annual commencement exercises of the University of Michigan June 29, the honorary degree of Master of Arts was conferred on Dr James Riddle Goffe ——Three medical inspectors of the Bureau of Child Hygiene have answered the call of duty These are Maj John F Dunseith and Edward R Maloney, and Capt James G Dunseith——Dr Carroll Chase, Brooklyn, sailed for Paris, June 4 He went for hospital service under the auspices of the American Relief for France and Her Allies——Dr Montgomery E Leary, Rochester, was reelected president of the New York State Sanitary Officers' Association at the recent meeting of that organization in Saratoga——Dr and Mrs Fred H Albee have sailed on the St Paul for Liverpool——Dr Francis R Holbrook arrived home from Europe on the French Liner *Lapland*

Another Base Hospital Fully Equipped—Edward B Close has placed $50 000 at the disposal of Dr Samuel Lloyd of the Post-Graduate Hospital for the purpose of organizing and equipping a 500-bed base hospital to be used in case of war with Mexico The complete personnel of the hospital will consist of 200 men, and volunteers are wanted for hospital orderlies who are accustomed to the work and in proper physical condition Dr Lloyd will be the director The remaining members of the staff, all from the Post-Graduate Hospital, are Drs John J Moorhead, Ward J MacNeal, James F McKernon, Frederick S Lobell, Stanley R Woodruff, George Francis Cahill, Francis C Ligouri, Walter J Wellington, Robert B Beard, Marshall C Pease, Jr, Henry R Kutil, Blake F Donaldson, Lawrence J Nacey, Frank K Pomeroy, James Francis Sullivan, Richard M Taylor and the Rev Duncan H Browne

The Spread of Infantile Paralysis—July 1 there were reported fifty-one new cases of infantile paralysis and eleven deaths July 3, sixty-seven new cases were reported July 4, twenty-five deaths from infantile paralysis were reported for the previous twenty-four hours Fifty-nine new cases and thirty-one suspects were reported from four municipal boroughs Since June 10 there have been 327 cases reported in Brooklyn, with a mortality of about 20 per cent In speediness of spreading the epidemic has already passed the record of 1907 A house to house canvass is being made in Brooklyn The known cases are, for the most part, confined to the Italian population Officials of the sanitary bureau are making a survey of the areas where infantile paralysis is most prevalent, to determine whether the stable fly is responsible for the recent outbreak of the disease The groups of cases in Brooklyn and Queens are roughly divided into four areas A special field force has been organized in Brooklyn under the charge of Dr Simon R Blatteis Brooklyn The premises where infantile paralysis exists will be placarded and when complete isolation and proper nursing cannot be maintained at the homes, the patient will be removed to a special pavilion at the Kingston Avenue Hospital where a special visiting staff of experts, including specialists in children's diseases, orthopedics and neurology are assisting the regular attending staff The department calls attention to the importance of the highest possible degree of cleanliness in the home and of the patient In the orders issued June 30, the local health officers of Orange, Rockland, Putnam, Westchester, Nassau and Suffolk counties were instructed to report by telegraph every suspected case of infantile paralysis and enforce the strictest quarantine of the patient The health officers are also urged to give the widest possible publicity to the order and in the case of an epidemic to issue special bulletins so that the people may be informed of the dangers The epidemic originated in the tenement population in Brooklyn, and has spread to three of the five boroughs of greater New York In one day forty-four new cases were reported, and up to June 30 there have been sixty-four deaths The department of health has enlisted the services of two large life insurance companies to aid in the distribution of warning leaflets and the distribution of one-half million such leaflets, printed in yellow the quarantine color, has been begun There are now 153 cases of infantile paralysis at the special pavilion of the Kingston Avenue Hospital A special staff of experts to care for these patients has been organized with Dr Lewis C Ager as chief Associated with him are Drs

Eugene F Dalton, Murray B Gordon, Judson P Pendleton, and Philip W T Moxom, who are experts in contagious diseases, Dr Robert O Brockway, a nerve specialist, Dr Walter Truslow, orthopedic surgeon and Dr Alexander Sophian, a laboratory expert At the present time the field staff, working under the general direction of Dr Blatteiss, consists of thirteen physicians, thirty nurses and twenty sanitary inspectors In addition to this, Mr Lucius P Brown, director of the bureau of food and drugs, has detailed twenty-five of his men to inspect and clean up all places where food is handled or sold The department announces that the free open air moving picture shows which it had planned to hold in Manhattan, the Bronx and Brooklyn, during the middle of July, would not be given since it would be impossible to prevent a gathering of large crowds of children to view the pictures At the request of Commissioner Emerson the department of licenses has notified all motion picture theaters in the city not to admit children under 16 from July 5 until such time as the board of health declares this health menace at an end

PENNSYLVANIA

Soldiers Inoculated—The entire National Guard of this state encamped at Mount Gretna have been inoculated with typhoid vaccine preparatory to their removal to Mexico

Advisory Board for Sanatorium.—Mayor Armstrong of Pittsburgh announces that he will appoint an advisory board for the tuberculosis hospital on the Leech farm, of which Dr H G Burns of the Bureau of Infectious Diseases is at present in charge

New Hospital for Pittsburgh—Plans have been posted for the new Mercy Hospital building, to cost $500,000 The building is to be eight stories in height, 100 by 250 feet, and is to be built of brick, terra cotta, reenforced concrete and steel

Personal—Dr Charles M Stephens, York, has gone to Waycross, Ga, where he is a member of the staff of a railway hospital——The degree of LL D was conferred on Dr Samuel Z Shope, Harrisburg, by Lebanon Valley College, June 16——The degree of Doctor of Science was conferred by Lafayette College, Easton, on Dr Samuel G Dixon, state health commissioner, June 14

Philadelphia

Hospitals Offer Aid—Practically all the institutions of Philadelphia have announced their readiness to take care of the sick and wounded of the army and navy, and the authorities at Washington have been notified of the action of the hospital officials

Tribute to Dr White—In the London *Spectator* an eloquent tribute appears to the memory of Dr James William White, who died April 24 The tribute closes with "We shall do well if in reckoning up the toll of those who gave their lives for freedom, we do not omit from our list the name of William White"

Hospital Unit Formed—Physicians on the staff of the University Hospital have organized a hospital unit for service in the United States Army, and have notified the Southeastern Pennsylvania branch of the American Red Cross that they are ready to respond on call The university unit, if called, will be assigned to take charge of a base hospital, and will be thoroughly equipped Dr Edward Martin is director of the unit and among the members of the staff are Drs John B Deaver, Alfred Stengel, George Edmund de Schweinitz, Allen J Smith, Eldridge L Eliason, Joseph Sailer, M Howard Fussell, Charles H Frazier and George P Muller

Philadelphia Physicians Go with Troops—Five young physicians serving as interns at the Philadelphia Hospital have joined the health department of the National Guard, and will go to the Mexican border with the Pennsylvania troops The doctors enlisted on June 21, and it is said that they will serve in various field hospitals Those who joined the guard from the Philadelphia Hospital are as follows William T Lyneberry, James W Doughty, Joseph G Fernbach, Stuart E Trowbridge and H Freeman Warren Dr Charles B Kendall, also an intern at the hospital, has been a member of the guard for two years, and will join the Second Field Hospital Corps

Personal—Daniel Lincoln Wallace had conferred on him the degree of Doctor in Chemistry by the University of Pennsylvania, June 21 and on the same day Dr Charles Karsner Mills was given the honorary degree of LL D——Dr S Lewis Ziegler has been elected trustee of Bucknell University, Lewisburg——Dr Pierre N Bergeron and Dr Frank D Harris have been appointed gynecologists-in-chief to St Mary's Hospital——Dr Royal H McCutcheon of the Methodist Hospital staff has enlisted with the Pennsylvania National Guard in the Hospital Service——Dr Edward K Tullidge, who recently returned from the Balkans, has been appointed lieutenant-surgeon in the National Guard

New Health Centers—There has been appropriated $25,000 by councils for baby saving work during this summer Director Wilmer Krusen of the department of health and charities will establish four health centers for mothers and babies in place of the single one held heretofore in the Second Ward The centers will be located in the Sixteenth Ward with subcenters in the Eleventh, Twelfth, Thirteenth, Eighteenth, Thirty-Sixth and First wards The appropriation provides for the renting of houses, purchase of tents, use of vacant lots, and milk and ice for poor babies and their families Each center will have a woman physician, a sanitary inspector, and fifty-eight nurses will be distributed throughout these centers

GENERAL

Pure Milk Experts Meet—At the annual meeting of the American Association of Medical Milk Commissions, held at the Cincinnati General Hospital, June 10, Dr Walter D Ludlum, Brooklyn, was elected president, Dr Otto P Geier, Cincinnati, secretary (reelected), William J Graf, Cincinnati, assistant secretary, J P Sedgwick, Cleveland, treasurer, and Henry F Price, Pittsburgh, member of the council

National Board Examination—The National Board of Medical Examiners announce that its first examination will begin, October 16, at the Army Medical Museum, Washington, D C, and will continue for one week No charge is made for the examination itself, but a registration fee of $5 is required Further particulars may be obtained from the secretary of the board, Dr John S Rodman, 2106 Walnut St, Philadelphia

Red Cross Hospitals for Border—The Chicago chapter of the Red Cross is raising a fund of $200,000 to be used for the creation and operation of four base hospitals on the border and four hospital columns on lines of communication with troops These hospitals and columns will be fully equipped and will have a full complement of physicians, nurses and all necessary assistants The chapter will also purchase supplies for wounded men and for troops, will care for the dependent families of national guardsmen and will maintain a general fund for miscellaneous needs occasioned by war

American Hay-Fever-Prevention Association—At the annual meeting of this organization, held in New Orleans, of which brief mention was made in The Journal last week, it was reported that thirty four state boards of health, including Louisiana, Mississippi and Alabama, are cooperating in the campaign against hay-fever, and that the United States Public Health Service has placed the Hygienic Laboratory at Washington at the disposal of the organization for scientific investigations and has now published an illustrated list of the most common hay-fever weeds The research department of the association has completed a list of hay-fever weeds for the southern, middle and eastern states and is now making arrangements to complete a similar list for the western and Pacific states

Military and Civilian Relief—The relief work of Red Cross chapters is divided into a section for military relief and one for civilian relief The first section takes charge of the collection, purchase, warehousing, packing and forwarding of supplies to soldiers and sailors The section for civilian relief has charge of all work pertaining to the relief of destitute families of soldiers and sailors Care is especially requested in the collection of reliable information, in the proper distribution of relief, the avoidance of haphazard, spasmodic and irregular methods, and discrimination as to whether relief should be in the form of money or supplies The chapters of the Red Cross are authorized to solicit contributions of money or supplies and to spend or distribute these funds and supplies under proper safeguards, accurate account being made of all monies received and expended

The Mobilization Camp Personnel—The following are the changes and additions to the list of officers on duty at mobilization camps in the Central Department Ohio, Capt Frank Winders M C, U S Army, Lieut Charles F Bowen, M R C, U S Army, Columbus Minnesota, Capt

Will L Pyles M C U S Army, in place of Maj George H Crabtree M C, U S Army, Capt Thomas H Johnson M C, U S Army Michigan, Lieut-Col Charles L Willcox M C U S Army, in place of Maj James L Bevans M C, U S Army, Capt Charles E Freeman M C, U S Army Indiana, Capt Arthur M Whaley, M C, U S Army, and Lieuts John J Boaz Harvey A Moore, Edmund D Clark and Orange G Pfaff M R C U S Army all of Indianapolis Nebraska Capt Ernest R Gentry M C U S Army, in place of Capt Charles F Craig M C U S Army

Bequests and Donations—The following bequests and donations have recently been announced

For the completion of the fourth base hospital of the American Red Cross in New York a donation of $10 000 from Mrs Willard D Straight

St Johns Guild and Lincoln Hospital New York each $100 000, and New York Orthopedic Hospital, $50 000 by the will of Mrs Helen Cuillard

St Lukes Hospital New York $10 000 by the will of Waldron Post Brown

St. Marys Hospital Milwaukee $2 000 by the will of Antoinette Weenan and also unless the contest to the will proves successful about $350 000 as a fund for the establishment of free medical dispensary service in Milwaukee

St. Lukes Hospital (Chicago) building fund donation of $100 000 by Mrs George M Pullman

Albany Medical College $12 635 20 by the will of Dr John M Bigelow and donations of $41 000 from five citizens of Albany to meet the deficit of the running expenses

Medical Preparedness—Prompted by the considerations that the medical profession in peace and in war has always been ready to serve the best interests of the government out of a spirit of patriotism and cooperation that the European war has demonstrated the need of greater medical supplies and more efficient organization of medical resources in connection with war activities than was formerly deemed necessary or adequate, and that every United States soldier and sailor is entitled at all times to protection in sanitary matters and to proficient medical and surgical care, a committee including representatives from the principal medical organizations has tendered to the existing agencies of the government its services toward the medical welfare of the army and navy These services comprise the establishment of an organization to make a comprehensive survey of the resources of the government, the invoicing of the resources available in peace and in the emergency of war including the names of men available for field or home duty, who are trained in medicine, surgery and sanitation, the equipment of the hospitals with which these men are connected the buildings available for hospital use, the facilities for transportation of the wounded, food and drug supplies available, lists of trained nurses and other hospital helpers, and to aid in the care of the sick and wounded and the elimination of preventable diseases A committee of twenty-nine was formed of which Dr William J Mayo Rochester, Minn, was made chairman, and Dr Frank F Simpson, Pittsburgh secretary of the advisory committee The general committee has selected a subcommittee in each state to aid in the general survey of the medical resources of the country The national committee is composed of three honorary members, the surgeons general of the army navy and Public Health Service, six ex-officio members Col Jefferson R Kean M C U S Army, and the presidents of the American Medical Association American Surgical Association Congress of American Physicians and Surgeons Clinical Congress of Surgeons of North America and American College of Surgeons, thirty members appointed by the foregoing and a number of associate members representing important subjects closely allied to medicine In addition there are state committees of nine members each and territorial committees of three members each and a number of aides for local work The committee will endeavor to interest the medical profession of the country in the desirability of applying for commissions in the Officers' Reserve Corps Medical Department By a mutual understanding between the committee and the American Red Cross, the organization will cooperate with the Red Cross in raising its civilian and military work to a high point of efficiency and in organizing a considerable number of Red Cross hospital units in strict accord with the most recent advances and the highest ideal of medicine Up to the present time lists of 21 000 physicians have been made out thus making a sufficient force to care for 3 000 000 soldiers on the basis of seven commissioned medical officers to each 1,000 men

LONDON LETTER

London, June 10, 1916

The War

WASTAGE OF MEDICAL OFFICERS IN THE ARMY

The authorities are always insisting on the need for more medical officers in the army It is plain that several forms of wastage exist at present The wounded could be run straight in by motor from the advanced dressing stations to the casualty clearing hospitals, without any necessity for stopping at the intervening "field ambulances," which indeed might be done away with altogether, setting free thirty doctors in each division for more useful work. The plan which makes each division a self-contained medical unit works out as an impediment instead of a help, to efficiency, for in a battle, when a division moves out of action, its field ambulances move out with it, and lend no help to any other unit The wastage of physicians due to this arrangement is great, and for every one division in action, two, or more than two, are kept in reserve, and the medical officers belonging to them are for the time being standing idle If, instead, each army were taken as the unit, then the physicians belonging to this large unit would never be out of action, but constantly available to be sent where they were most needed (except when off duty) Again physicians' services should not be thrown away on mechanical or purely clerical work, which could be done just as well by men not trained in medicine Special skill ought to be utilized as far as possible, and medical students employed not as combatants, but as dressers A great wastage of medical services is caused by appointing the full complement of physicians to serve on the field ambulances of the great army in training at home, and as these doctors are already trained in their profession, they are not needed until the new army is nearly ready to go abroad No doubt these reforms will be made in time Our national character is too conservative for rapid reforms We are, too so empiric that, as the whole history of the war shows, we do not work by schemes carefully thought out beforehand, but improve as we go along and defects are disclosed

THE FEEDING OF BRITISH PRISONERS IN GERMANY

Some time ago your Berlin correspondent described the feeding of prisoners in Germany, giving the number of calories allowed and implying that conditions were satisfactory Unfortunately the evidence is overwhelming that the feeding of British prisoners is far from this If independent evidence were necessary it is furnished by the report made by Dr A E Taylor, an American physician, through the United States ambassador in Berlin, on the feeding of British subjects interned at Ruhleben It is published as an official document by the British government Dr Taylor lays down what he considers to be a minimum diet for an adult male not engaged in hard work, the figures being supplied largely by German investigators This consists of protein from 70 to 90 gm a day, carbohydrate to a value of 3,000 or more calories a day depending on the work done, at least 25 to 50 gm of fat a day, salts and vitamins, that is, substances found in fresh food and known to be essential to life This minimum is looked on as enough to keep a man nourished "like a machine" It omits the vital questions of variety and choice and taste altogether Dr Taylor surveyed the prisoners' diet during seven days, and he comments as follows "If all the men in the camp had taken their numerical share of the food offered, the average daily input per man would have been 60 gm of protein 13 gm of fat, 308 gm of carbohydrate corresponding to 1,590 calories" Happily all the men did not ask for their rations, and so those who did ask got a trifle more This, however is the conclusion It is equally clear that the food provided and served during the week of the survey was not sufficient in any direction to provide nourishment for the 3 700 men concerned had they been entirely dependent on it Fresh fish was served on three days of the survey On one day the quantity was sufficient but on the first and third days the supply ran out with 100 and 250 men still in line These men were then provided with tinned fish which many of them refused" The refusal is not surprising in view of the following The camp possesses a stock of *Bratharing* in large tins On one occasion I witnessed the opening of seventeen of these tins Five were distended with gas which rushed out when the tins were punctured The contents of these tins were found to be in a state of advanced putrefaction The contents of the other tins were not putrefied but could not be regarded as in a satisfactory condition I believe that this lot of herring should be condemned

HOSPITAL WORK FOR WOMEN PHYSICIANS

At several of the large hospitals in London the calling up of the remaining members of the medical and lay staffs who are of military age will make it difficult to carry on the work efficiently Wherever women can take the places of men they are being employed, but some of the duties in hospitals cannot be performed by women Appeals are being made to the tribunals for exemption for dispensers and other servants who cannot be replaced Before the war there were practically no women dispensers at the hospitals Now a woman dispenser is engaged at the First London General Hospital, however, and two are to be installed at the London Hospital next month For clerical work, women are now employed in all the hospitals The chief difficulty in regard to the medical staffs arises through the dearth of resident officers The present practice is that when a student has qualified for appointment he receives an honorary commission, and stays for about three months at the hospital before passing on to military service

Sir Frederick Treves, speaking at the fourth annual meeting of the association and governors of the South London Hospital for Women, whose new premises will be opened by the queen, July 4, said that a feature of this hospital which was most striking and commendable was that it was staffed by women What might be the full extent of the work of the woman physician it was impossible to foretell, but obviously her first efforts should be directed to the treatment of women and children He regarded the battle of the woman physician as ended Until a few years ago her greatest need had been opportunity This the war had afforded, and she had taken advantage of it admirably No one could dispute that the manner in which the woman physician had taken her place in the medical work connected with the war was beyond praise One thing still needed before the woman physician could be said to have come into her own was the opportunity of hospital practice

PARIS LETTER

Paris, June 8, 1916

The War

AN ASSOCIATION OF RED CROSS PHYSICIANS

A society has just been founded under the provisional title "Reunion amicale et scientifique des medecins et chirurgiens des hopitaux auxiliaires," or "Social and Scientific Reunion of the Physicians and Surgeons of the Auxiliary Hospitals" This society will concern itself with all questions interesting its members as physicians and surgeons of the Red Cross

Appendicitis and Syphilis

Dr Gaucher, clinical professor for diseases of the skin and syphilis at the Faculte de medecine de Paris, read a communication before the Academie de medecine in which he sought to prove that appendicitis and enterocolitis are very nearly related to syphilis He stated that this disease is always found in the history of those who suffer from the first two, especially in their family history This expression of opinion gave rise to strong objections Dr Jalaguier of the Faculte de medecine de Paris and surgeon of the hospitals stated that he had made an investigation, as the result of which he is absolutely convinced that there is no pathogenic relation between appendicitis and syphilis, either congenital or acquired Appendicitis may occur in a syphilitic person as it may occur in a tuberculous patient, but while tuberculous lesions have been observed in appendicitis, Jalaguier does not believe that typical syphilitic changes have ever been demonstrated in the appendix Dr Routier, surgeon of the Paris hospitals, agrees with Jalaguier that it is not safe to follow Gaucher's conclusions He has performed a great number of operations for appendicitis, but he has never found any relation between appendicitis and syphilis There does not, in his opinion, exist a syphilitic appendicitis amenable to specific treatment Professor Quenu supported Dr Jalaguier and pointed out that, to establish the syphilitic origin of appendicitis, Gaucher should have brought forward anatomopathologic proofs, which he did not do Dr Monod, of the Faculte de medecine de Paris, in supporting the statements of Drs Jalaguier, Routier and Quenu, stated that he also, in the course of a long experience, had never observed an appendicitis which could in any way be attributed to syphilis

Death of Dr Paul Redard

The death is announced of Dr Redard of Paris, which occurred at Cannes He was formerly chief of the clinic de la Faculte de medecine de Paris and surgeon in chief of the Furtado-Heine hospital and dispensary He specialized in orthopedics, on which subject he had published a number of works

Against Alcoholism

The Union des Françaises contre l'alcohol (Union of French Women against Alcohol) has organized, in the form of a vast series of petitions to parliament and to the public authorities, a great public manifestation against alcoholism which is timed to coincide with the reassembling of parliament For this purpose there have been distributed to the adherents of the various feminist groups copies of the petition addressed to parliament and to the government In this petition the union insists on the principle that private interests must give way before those of the country, and, when it is a question of the general lives of millions of beings, one must not stop at half measures The petition demands the abolition of the privilege of the small distillers, the suppression of spirits for drinking, and the development and encouragement of the use of industrial alcohol

M Albert Thomas, undersecretary of state for artillery ammunitions, is beginning serious steps for the vigorous repression of the ravages of alcohol in factories working for the national defense in the neighborhood of which new saloons have been opened These measures comprise regulation of the consumption, and closing of the saloons and the application to soldiers working in the factories of the same rules as those for their comrades with the colors with the accompanying sanctions Every workman found drunk will be immediately sent to the front

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Marriages

Capt Alfred Parker Upshur, M C, U S Army, Camp E S Otis, C Z, to Miss Amelie Augustine McAlister of Washington, D C, in New York City, June 15

Katherine Isabel Tate Slattery, M D, Boston, and Norristown, Pa, to Mr W J Lore Fricka of Philadelphia, at Philadelphia, June 21

Nathaniel Mills, M D, Mt Vernon, N Y, to Miss Gladys Josephine Capen of Bronxville, N Y, at Mt Vernon, June 29

John Clay Williams, M D, to Miss Catherine Curum, both of Stroud, Okla, at Kansas City, Mo, recently

Henry Edward Oesterling, M D, Wheeling, W Va, to Miss Mary Thornton Patton of Philadelphia, June 14

Christian Ulrich Senn, M D, to Miss Harriet A Smith, both of Ripon, Wis, at Westfield, Wis, June 17

John Russell Noyes, M D, Brockton, Mass, to Miss Frances Hughes of New York City, June 17

Arminius Cleveland Pole, M D, to Miss Margaret MacPherson Horn, both of Baltimore, June 22

Melvin Albert Vogtel, M D, Winthrop, Minn, to Miss Emily Beatrice Clark of Chicago, recently

Walter Irenaeus Ryder, M D, to Bernadette Marie McWeeny, M D, both of Boston, June 20

Joseph M Spellissy, M D, Philadelphia, to Miss Josephine C Schwarz of Harrisburg, Pa, June 21

Ralph Wilbur Hardinger, M D, to Miss Helen M Calkins, both of Cincinnati, June 17

William James Neuzil, M D, to Miss Alice Dobry, both of Cedar Rapids, Ia, June 14

Egdar Newton Fought, M D, to Miss Edith C Donohue, both of Philadelphia, June 22

Clara H Moore, M D, to Prof James D Phillips, both of Madison, Wis, recently

Justin Allis Garvin, M D, to Miss Charlotte Meyer, both of Cleveland, June 16

Washington West, Jr, M D, to Miss Agnes Mace, both of Belleville, Ill, June 16

Elmer Irl Dunkelberg M D, to Miss Julia E Miles, both of Waterloo, Ia, June 17

Kevin David Lynch, M D, to Miss Florence Sennett, both of Butte, Mont, June 20

Thomas J B Shanley, M D, to Miss Anna Sennett, both of Butte, Mont, June 20

Deaths

Thomas A Ashby, M D, Baltimore, University of Maryland Baltimore, 1873, aged 68, a Fellow of the American Medical Association and president of the Medical and Chirurgical Faculty of Maryland in 1890, a fellow of the American Gynecological Society and of the American College of Surgeons, professor of diseases of women in his alma mater, professor of obstetrics and clinical gynecology in the Woman's Medical College, Baltimore, gynecologist to the Maryland General Hospital and consulting gynecologist to the Baltimore Home for Incurables, St Agnes' Hospital and Mount Hope Asylum Baltimore, a member of the House of Delegates of Maryland in 1910, who had conferred on him the degree of LL D by Washington and Lee University in 1912, author of several books dealing with the Civil War, widely known as a teacher and gynecologist, died at his home, June 26

Grear Hill Baker, M D., San Antonio, Tex , Medical College of Ohio, Cincinnati, 1903, aged 37, a Fellow of the American Medical Association, formerly of Cincinnati, demonstrator of histology and bacteriology in the Cincinnati Dental College, demonstrator in the Children's Clinic and assistant in the chair of materia medica in his alma mater, and a member of the staff of the Cincinnati City Hospital, chief surgeon of the San Antonio Traction Company and Gas and Electric Company, died at his home, June 15

J Seward White, M D, South Glens Falls, N Y , Albany N Y, Medical College, 1880, aged 59, formerly a Fellow of the American Medical Association, a member of the Medical Society of the State of New York, a member of the medical staff of Parks Hospital, Glens Falls, for many years village trustee and health officer, for twenty-five years president of the First National Bank of South Glens Falls, died at his home, June 19

Vincil O Williams, M D, Nevada, Mo , St Louis University School of Medicine, 1904 aged 36, a Fellow of the American Medical Association, division surgeon of the Missouri Pacific railroad and superintendent of the Vernon Sanitarium, Nevada, chief surgeon on the staff of Brigadier General Harvey C Clark, was found dead in his motor car near the state national guard camp, Nevada, June 24

Thomas Francis Cashman, M D, Washington, Pa , University of Georgetown, Washington, D C, 1902, aged 36, a Fellow of the American Medical Association, a member of the medical staff of the Washington Hospital and lecturer on anatomy in its Training School of Nurses, died in the West Penn Hospital, Pittsburgh, June 21

Albert G Clopton, M D, Dallas, Tex , Tulane University, New Orleans 1852, aged 89, a veteran of the Mexican War and in the Confederate service during the Civil War, for eight years a member of the faculty of the University of Texas, died at the home of his daughter in Texarkana, June 20, from senile debility

Henry J Cook, M D, Cincinnati, Medical College of Ohio Cincinnati, 1893, aged 50, a Fellow of the American Medical Association and a member of the Cincinnati Academy of Medicine, a member of the Cincinnati City Council for eight years, died in Bethesda Hospital, Cincinnati, June 17, from gallstones

Joel Henry Rieger, M D, Kansas City, Mo , College of Physicians and Surgeons in the City of New York, 1872, aged 66, for many years surgeon of all but one of the railroads centering in Kansas City, died in the German Hospital, Kansas City, June 14

Harold Herbert Johnson, M D, Princeton, Ia , University of Illinois Chicago, 1905 aged 33, while on his way to his old home in Wilton Junction, Ia , in an automobile, June 25, was struck by a Rock Island train at a grade crossing in Wilton, and instantly killed

Edward M Hall, M D, Delaware, Ohio, Homeopathic Hospital College, Cleveland 1871, aged 70, a Fellow of the American Medical Association and formerly president of the Delaware County, Ohio, Medical Society, died at his home, June 19

John Owen Smith, M D, South Canterbury Conn , Eclectic Medical College in the City of New York, 1882, aged 75, for forty-five years a continuous holder of public office, and twice a member of the state legislature, died at his home June 23

Oscar J Gwynn, M D, Granite City, Ill , George Washington University, Washington, D C, 1896, aged 48, a Fellow of the American Medical Association, died in St Luke's Hospital, St Louis, June 16, from peritonitis following acute gastritis

William C Goodwin, M D, Odessa, Mo , Jefferson Medical College, 1853, aged 84, also a druggist, surgeon in the Confederate service throughout the Civil War, for sixty years a practitioner of Missouri, died at his home, June 16

John H Alpers, Rantoul, Ill (license, years of practice, Illinois, 1878), aged 80, for nearly forty years a practitioner of Rantoul, died at the home of his daughter in that place, June 18, from cerebral hemorrhage

James Lewis Williamson, M D, Tuscaloosa, Ala , University of Alabama, Mobile, 1881, a trustee of the State Insane Hospital and the oldest practitioner of Tuscaloosa, died suddenly while making a professional call in that city, June 16

Delbert C Ayers, M D, Toledo, Ohio, Eclectic Medical Institute, Cincinnati, 1889, aged 46, formerly a member of the Ohio State Medical Association, died at Battle Creek, Mich , June 14, from a nervous disorder

Edward P Montgomery, M D, Whitewright, Tex , University of Louisville, Ky, 1887, aged 55, a member of the State Medical Association of Texas, was accidentally killed while crossing a railroad track, June 10

Frederick Ainsworth Pillsbury, Cambridge, Mass (license, Massachusetts, 1896), aged 48, who had never practiced medicine, but was employed as a chemist, died suddenly in his room in Cambridge, June 11

Russell Brown Smith, M D, Westerly, R I , College of Physicians and Surgeons in the City of New York, 1884, a Fellow of the American Medical Association, aged 59, died at his home, June 4

Frederick H Sage, M D, Middletown, Conn , New York Homeopathic Medical College, New York City, 1884, aged 55, died in Middlesex Hospital, New York City, June 7, from pneumonia

Upton E Traer, M D, Evanston, Ill , New York Hygeio-Therapeutic College, New York City, 1873, aged 81, died in the Evanston Hospital, June 12, from the effects of a fracture of the hip

Charles Macalo Tobyne, M D, New York City , Eclectic Medical College of the State of New York, 1897, aged 48, died at the New York Post-Graduate Hospital, June 13, from heart disease

Henry B Tate, M D, Pacolet, S C , Atlanta, Ga , Medical College, 1887, aged 54, formerly a member of the Medical Association of Georgia, died at his home near Pacolet, May 30

Charles H Gilbert, M D, Rushville, Ind , Pulte Medical College, Cincinnati, 1879, aged 58, an ophthalmologist and otologist, died at his home, June 13, from heart disease

Thomas Miller, M D, Fincastle, Va , M R C S England, 1859, Guy's Hospital, London, 1860, aged 79, died at his home near Fincastle, May 29, from cerebral hemorrhage

Augustus Marable, M D, Dallas, Tex , University of Vermont, Burlington, 1895, Long Island College Hospital 1897, aged 48, died at his home, June 1, from acute gastritis

Walter B Pier, M D, Moscow, Pa , Jefferson Medical College, 1884, aged 56, also a druggist, died at the home of his wife's mother in Moscow, June 9

John T White, Grand View, Ind (license, Indiana, 1897), for two terms auditor of Spencer County, a veteran of the Civil War, died at his home, June 9

Andrew Franklin O'Bryan, M D, Longview, Tex , Medical College of the State of South Carolina, Charleston, 1860, aged 80, died at his home, June 7

Robert M Bailey, M D, Silverrun, (Jenifer P O), Ala , Atlanta Ga Medical College, 1866, aged 76, a Confederate veteran, died at his home, June 7

William Arthur Hanlin, M D, Middleport Ohio, Hahnemann Medical College Chicago 1881, aged 66, died at his home, June 5, from diabetes

Eugene Albert Gilman, M D, Boston Harvard Medical School, 1872 formerly of South Boston, Mass , died in Boston, June 17

Wallace D Jefferson, M D, Petersburg Va , Medical College of Virginia, Richmond, 1905, died in Staunton, Va , June 11

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

WINE OF CARDUI SUIT

(Continued from page 64)

May 17, 1916, Afternoon

TESTIMONY OF DR GEORGE C AMERSON (*continued*)

Dr Amerson resumed the stand for the plaintiff in rebuttal

FURTHER CROSS-EXAMINATION BY MR T J SCOFIELD

Q —Doctor, what is synergism? *A* —What is it?

Q —What is synergism? *A* —Well it is that term applied to the action of drugs whereby their activity or potency is increased by being in combination with another drug of similar action

Q —Do you know anything personally about the synergistic action of drugs? *A* —No, sir

Q —You never had any experience in testing such action? *A* —No, sir

Q —Well, is there such a thing as synergistic action or do you know? *A* —As far as I know, there is

Q —I am not asking so far as you know I am asking whether there is or is not? *A* —From my personal experience and experiments, no

Q —Doctor, I suppose you are familiar with what is ordinarily called flooding by the laymen, are you not, in women? *A* —Yes, sir

MENORRHAGIA AND METRORRHAGIA

Q —That is what you call menorrhagia, is it? *A* —Yes, sir

Q —Or metrorrhagia? *A* —Yes, sir

Q —What is the difference between menorrhagia and metrorrhagia? *A* —One is flooding between the regular periods, that is menorrhagia, and metrorrhagia would be excessive flooding at the regular period

Q —How is that, doctor? State that again I did not get your answer *A* —Menorrhagia is flooding between the periods or flooding between the periods, excessive flooding, and metrorrhagia is excessive flowing at the normal period

Q —That is your understanding of the definition of the two terms, is it? *A* —Yes, sir

Q —You feel quite sure that you are right as to that definition, or those definitions? *A* —These terms are very often used together I believe I am right,-yes sir

Q —Well now, is it not a fact, that you are not right, and that you have just got that reversed?

An objection was made by Mr Walker, attorney for the plaintiff, but withdrawn

Q —You still adhere to that answer, do you? *A* —Yes, sir

Q —Now, I ask you again, don't you know that that is not the proper definition of either one? *A* —I could not say that, when I just said that I believe it is

The witness then stated that menorrhagia and metrorrhagia might have a common cause He does not believe that—as stated in the Ladies Birthday Almanac for 1907—"Flooding is always a sign of danger The best treatment is complete rest in bed and Wine of Cardui three times a day" The witness stated the various causes which produce flooding in which this treatment would not be proper treatment

He stated that where there was simply an engorgement of the uterus and tubes and adnexa, that treatment would be all right He stated that the medicine in Wine of Cardui might be indicated and be a good treatment and would not do any damage in a case of acute salpingitis without suppuration, recognizing the fact that it contains 48 drops of alcohol He considers the alcohol *negligible absolutely* in the doses and frequency given in Wine of Cardui He considers the alcohol negligible because it is oxidized in the stomach He does not know how much is oxidized in the stomach but he believes that some of it is He does not know that none of it is oxidized in the stomach He stated that the rest of it is oxidized in the blood stream and intestinal tract He thinks it could be broken up anywhere He does not know what it is broken up into

Q —I understand you to say that it *loses its toxic* effect by reason of being oxidized? *A* —No

Q —Is that right? *A* —No, sir

Q —What was it you said about that? *A* —I said that alcohol in the quantity given would not be toxic

Q —Why? *A* —Because in the dilution and percentage of it, I would consider it possibly to have—to be a food, possibly a tonic, and if given in stronger doses, or larger quantities it would be a stimulant When you get beyond the stimulant stage, you get the toxic action

Q —Then it does not lose its effect whatever that may be, by reason of oxidization? *A* —*Certainly it does*

Q —How does it produce intoxication then, doctor? *A* —Because, of its rapid absorption *in* enormous quantities

Q —Well, need the quantities be *enormous in* order to produce intoxication? Does not that depend on the person? *A* —It varies with the individual, yes, sir

Q —So that, notwithstanding the fact that you say it is oxidized, it will nevertheless produce its effect, don't it? *A* —I do not understand you

Q —That is, its intoxicating effect, doesn't it? *A* —If taken in sufficient quantities, yes

Q —When does it produce that intoxicating effect, before it is oxidized or after? After it is oxidized or before? *A* —I don't know, I suppose it would be before

Q —So that the toxic effect precedes oxidation, does it? *A* —Yes I should imagine so

Q —How rapidly is alcohol oxidized? *A* —I do not know, it varies with the—

Q —How much of the alcohol—

Mr Walker —Wait a moment He has not finished his answer

A —*I* said *I do not know* It will probably vary with the amount of it that was taken, and the contents of the stomach probably would influence it.

The witness has never tested for alcohol in urine He stated that almost any intoxicant, if taken in sufficient quantity to produce a toxic effect, *would be found in all the* secretions and if it was oxidized and broken up and *separated,* it could not be identified He stated that if the alcohol is found in the urine, it is not oxidized He does not know how much alcohol is oxidized in the system but he imagines that it varies *with the individual* and *with* the amount of tolerance of the alcohol He does not know how much of 48 drops of alcohol contained in the Wine of Cardui is oxidized but he imagines that it all is He does not, however, know He stated *that alcohol is a habit forming* drug but he does not *know what percentage of alcohol is necessary in a solution* to be habit forming He believes that it would vary in different individuals

Q —Is it not true that the tendency of the formation of the habit *depends more particularly upon the effect of the amount of alcohol* that is taken, on the person, rather than on the percentage? *A* —I do not know as to that *I could see how it would be both* ways

Dr Amerson stated that the medicine similar to Wine of Cardui is a proper medicine, provided the symptoms call for a medicinal agent that was in the solution It would not be a proper medicine when there were no symptoms and therefore it is not good in all cases

The witness stated that puberty is an entirely physiologic and natural process, and that in a great percentage of cases, no medicine is indicated

The witness stated concerning a statement in the Home Treatment for Women for 1912, to the effect *that* "every girl should take Cardui at the time of puberty It could not do her anything but good," that he did not believe every girl should take it without symptoms

Dr Amerson stated that he does not agree that such a combination is indicated for and should be used by all married women regardless of their physical condition The witness stated concerning the statement from the Home Treatment Book for Women for 1913 "all newly married women should take Cardui," that he does not agree with it The witness stated that unless there was some *indication for its* use such a medicine should not be used by all pregnant women

Q —Do you believe, doctor, in the statement contained in Home Treatment, that that medicine so taken could never do a pregnant woman anything but good? *A* —Yes, I do agree with that

Mr T J Scofield *Q* —Do you believe in that? *A* —Yes

Q —That this alcoholic *medicine* could never do a pregnant woman, anything but good? *A* —Yes, I do

Q —Suppose that she had Bright's disease, *doctor* then do you think it would *do her good*? *A* —The good that might be accomplished by the medicine would probably be overcome by the very *slight possibly irritating* effect that you are trying to assume that the *alcohol* would have

Q —You say it might *be*? *A* —Yes, yes I believe it would be

Q —Then you think that a woman who is pregnant, and suffering with Bright's disease, and had albumin in her urine, might with *perfect safety* and with *good* results take this medicine three or *four* times a day throughout the period of pregnancy, do you believe that? A—Yes if she had the Bright s disease as bad as you are asking of me she probably would not continue her pregnancy

Q—What? A—If she had her Bright's disease, as acute and as active as you are indicating to me, she probably would not continue her pregnancy

Q—She would have eclampsia wouldn't she? A—She might have

Q—Would you be willing or do you subscribe to the doctrine that a woman in that condition, should continue to take such a medicine as that in that condition throughout the time that she would carry her child? A—I don't believe the alcohol would have any influence on it at all

Q—You don t? A—No sir

Q—And you state that upon your reputation as a physician and surgeon? A—Yes sir

MEDICINE IN PREGNANCY

Q—Do you believe that such a medicine as Mr Walker has described, and which contains 48 drops of pure alcohol taken as it is recommended three or four times a day in tablespoonful doses should be used by all women during the lying in period? A—Well it would be a help to practically all of them

Q—Do you believe that it should be taken by all women during the lying in period? A—Well all women' is a pretty general term

Q—I understand it is but that is the language of the book A—The great majority of them probably it would do a lot of good to practically all of them I should say

Q—Do you agree with that statement that it should be taken by all women during the lying in period? A—No because I believe some of them do not need anything

Q—Then you don t agree with that statement do you? A—Not—

Q—How is that? A—Well my answer suggests that I don t agree with it entirely not in its entirety I can see conditions where—

Q—Do you believe, doctor, that such a medicine as we have been talking about should be used by all women during all the years of the menopause? A—Not unless she has some symptoms that would suggest its use

Q—If she does not have symptoms that would suggest its use then that statement is not true is it? A—There would be no indication for medication then

Q—Then that statement is not true is it that all women should take it all through the period of the menopause? A—Well of course that includes them all again the same question over again

Q—You don t approve of it? A—I don't believe that all women would find it necessary to take it no sir

The witness stated that he has found albuminuria by examination of the urine, a great many times in pregnancy He treats such cases by putting the patient on a bland treatment of milk, etc If the medicine was indicated, the witness stated that it would be proper treatment to give an alcoholic solution He would not let the fact that there was alcohol in the medicine make any difference

Q—Would you try to avoid a medicine under such circumstances that contained 48 drops of pure alcohol which was given in dosages running in from three to four doses tablespoonful doses a day? A—It would depend upon what I thought of the kidney complication

Q—Suppose doctor that she was drinking two thirds of a bottle of beer every day would you want her to continue that or would you want her to cut it off? A—The chances are I would have her stop it for the time being in order to see what influence it had If he was in the habit of drinking beer right along—

Q—Why would you have her stop it? A—Well, just for purposes of observation I suppose

Q—That would be all? A—Yes

Q—If she had been drinking it right along would you think that had anything to do with the condition of albuminuria? A—No I probably would not

Q—Then why would you want to stop taking it? A—Just as I say to satisfy myself We meet lots of foreigners who drink wines and beer repeatedly and in large quantities and if albuminuria came up in a case of that kind why I would not feel justified in blaming it on the small amount of alcohol she had been in the habit of taking daily for years probably

The witness stated cancer is a relatively common condition at the menopause He did not think he could cure a beginning cancer of the cervix at the menopause, by using Wine of Cardui He did believe that at early stages of this disease, a radical operation might prevent the progress of the disease, and stated that he has eradicated some

Q—Now doctor take one of these cases such as you have had a cure of or eradicated in the early stages of the trouble suppose the woman had been taking such a medicine as Wine of Cardui for several months along in the dosage prescribed What then do you think would have been her chances of being cured when you discovered finally that she had cancer after it had involved the lymphatic glands? A—Well ordinarily carcinoma of the cervix and uterus is not recognized until it had extended quite far even by the surgeon and the medical men

Q—Well those are the cases then that you cured are they? A—No sir

Q—Then you did recognize them before did you? A—What do you mean?

Q—You say you cured cases of cancer of that kind? A—Certainly I have cured cases of cancer

Q—You recognized it early didn t you? A—Yes sir

Q—Well now, I say suppose that instead— A—By means of the pathologist, who identified it

WINE OF CARDUI IN CANCER

Q—I don't care what the means were Suppose that instead of coming to you for examination and the examination being made as you made it and the discovery being made as you made it, this woman had been taking Wine of Cardui along for months and months and months for a year until that involved the lymphatic glands, could you have done anything for her when she came? A—That would be all problematical I could not tell

Q—What is your judgment and opinion about it? A—I don t believe Wine of Cardui would influence it either way

Q—You don t think it would influence it one way or the other? A—No

Mr T J Scofield Q—In the meantime I suppose while she is taking it the disease would be progressing would it not? A—That is the history of cancer yes sir That it progresses

The witness stated that he agrees with the following statement from the Home Treatment Book for Women for 1912, "Cardui acts on the cause of the disease, and is, therefore, not a mere palliative, but a scientific and specific remedy, with a curative effect on the seat of the trouble"

The witness stated that he has an office in the same suite with Dr Funck, that they have a common reception room and that he has talked the case over with Dr Funck several times

REDIRECT EXAMINATION BY MR WALKER

Dr Amerson stated that there are six or seven other doctors and a couple of dentists in the same suite The witness stated that in those cases of menorrhagia and metrorrhagia in which he stated that this medicine would not cure, the disease was surgical, and that in such cases this medicine would be valuable as a tonic The witness stated that he does not believe Wine of Cardui would mask the symptoms of a cancer

Dr Amerson stated that within his knowledge of the medical profession after a diagnosis is made they are often at fault The witness stated that he believes that this medicine was a scientific and specific medicine with a curative effect There is no specific for the cure or treatment of gonorrhea Anything that would have a tendency to improve the general health, thereby increasing the local resistance and vitality, would be a scientific medicine with a curative effect

RECROSS-EXAMINATION BY MR T J SCOFIELD

Q—That is the way you cure gonorrhea, is it?

Mr Walker—That is objected to

The Court—He may answer

To which ruling of the Court the plaintiff etc excepted

A—Sir?

Mr T J Scofield Q—That is the way you cure gonorrhea? A—That is the way gonorrhea is treated, and that is the way a cure is accomplished

Q—That is the way you cure it, is it? A—How do you mean just the internal—

Q—Just as you have told Mr Walker A—I told you my theory as to how it is cured and I told you this morning how I treated it

Q—That is the way you do it? A—I treat it locally and generally and my general treatment is given for the purposes of accomplishing just what I have stated now

Q—Isn t it true that sometimes when you think you have gotten a case of gonorrhea cured that you give them a dose of alcohol for the purpose of seeing whether it livens up the condition and whether in fact it is cured or not? A—Some authorities say that gonorrhea is incurable

Q—Well isn t that true don t you give them alcohol after you think you have cured *them for the purpose of seeing whether or not they are* cured? A—I never have

Q—That profession generally does that or do you know? A—I don t believe they do

Q—Do you know whether they do or not? A—Deliberately give alcohol?

Q—Yes for the purpose of seeing whether or not the condition or gonorrhea has been cured? A—I don t believe they do I don t do it myself

Mr Walker—If you did give it you would not give it in a dose that would be negligible would you? A—No sir

TESTIMONY OF DR HENRY H RUSBY

Dr Henry H Rusby was called as a witness on behalf of the plaintiff in rebuttal, and, having been first duly sworn, testified as follows

DIRECT EXAMINATION BY MR. HOUGH

Q—State your name? A—Henry H Rusby

Q—Where do you live? A—Newark New Jersey

Q—What is your age? A—Sixty one

Q—What is your business or profession? A—I am professor of materia medica in the College of Pharmacy of Columbia University

Q—When did you graduate? *A*—1884

Q—Where? *A*—New York University

Q—What did you graduate as? *A*—M D

Q—Now, what are you doing? *A*—I am teaching materia medica

Q—Where? *A*—At the College of Pharmacy of Columbia University, in New York

Q—Do you occupy any other position? *A*—Yes, I am pharmacognosist for the Department of Agriculture of the United States government, examining drugs that come to the port of New York to see whether they are up to standard

Q—How long have you held that position? *A*—Ever since the Food and Drug Law went into effect, 1907

Q—What is a pharmacognosist, doctor? *A*—It is a men whose profession is to identify and select drugs

Q—What honorary positions have you held? *A*—I have been a member of the revision committee of the United States Pharmacopeia since 1890 I also taught materia medica in Bellevue Medical College for seven years

The Court—New York City?

A—Yes, sir

Mr Hough—Are there any other positions you hold? *A*—Not in a medical line

Q—Are you connected with the New York Botanical Gardens? *A*—Yes, sir, I am chairman of the scientific directorate of the New York Botanical Gardens

Q—Are you a curator also? *A*—Of the Economic Museum

Q—Are you member of any other revision committee than the revision committee of the United States Pharmacopeia? *A*—The *National Formulary*

Q—Are you a member of any other committee? *A*—Nothing in this line I am a member of a good many committees and societies

Q—Are you connected with the National Pharmaceutical— *A*—Oh, yes, that is another thing That book has already been published

Q—You are a member of that committee? *A*—Oh, yes

Q—Well, are you not a member of the New York Board of Health, the advisory committee? *A*—Yes, sir

Q—Are you a member of any other scientific organization? *A*—The American Pharmaceutical Association, and some foreign societies

Q—Sir? *A*—And some foreign societies

Q—Are there any others? *A*—Botanical societies, and the Academy of Sciences of New York

Q—Are you the author of any books? *A*—Yes, sir, I am one of the authors of the National Standard Dispensatory I am the author of the materia medica articles in Buck's Handbook of the Medical Sciences, and several books on botany

Q—Botany of what? *A*—Just structural botany, textbooks

Q—What positions have you held, doctor? *A*—Why, those that I have just stated, I might mention this, I was for some years botanist for Parke, Davis & Company

Q—Who are they? *A*—A large drug house of Detroit

Q—Were you ever connected with any hospitals or asylums? *A*—Yes, sir, I was clinical clerk to the medical staff of the Woman's Lunatic Asylum, on Blackwell's Island for a year

Q—For what length of time? *A*—One year

Q—Have you ever engaged in any exploratory work? *A*—Yes, I have been physician to two exploring expeditions

Q—What were they? *A*—One was on the Orinoco River, an exploring company gotten up in Minnesota, and the other was a journey across South America

Q—What part of the world have you been in in studying drugs? *A*—Pretty nearly the whole of the North and South American continents I have studied a good deal in England also, in the drug markets

Q—Does that examination of drugs in New York that come into this country, is that under the Treasury Department, or the Department of Agriculture? *A*—Department of Agriculture, Bureau of Chemistry

Q—Have you ever practiced your profession any, doctor? *A*—Well, I practiced—I was clinical clerk on the medical staff of the asylum in New York for a year, and I practiced as physician to those exploring expeditions, but I have never had any general family practice

Q—What are your duties, doctor, as professor in the College of Pharmacy? *A*—I lecture on materia medica and toxicology and also on physiology

Q—Do you lecture on drugs? *A*—Yes

Q—And actions? *A*—Their actions

Q—And their properties? *A*—Not on the drugs themselves I used to do that, but I had too much to do, and I turned it over to the associate professor I simply lecture now on their uses, and effects on the system, poisonous effects

Q—Well I say, that is of drugs? *A*—Yes, sir

Q—Doctor, do you know a drug called viburnum prunifolium? *A*—I do

Q—Have you any opinion as to its therapeutic value? *A*—I have

Q—What is your opinion as to its therapeutic value? *A*—It is one of the most valuable drugs in the pharmacopeia

Q—For what conditions? *A*—For spasmodic conditions of the abdominal organs

Q—What do they include? *A*—The intestines and uterus

Q—Doctor, do you know a drug known as carduus benedictus? *A*—I do

Q—Or cnicus benedictus, or blessed thistle? *A*—I do

Q—They are all one and the same, are they? *A*—Yes, sir

Q—Have you any opinion as to its therapeutic value? *A*—I have

Q—What is your opinion as to its therapeutic value? *A*—It is a useful medicine

Q—For what conditions? *A*—It is a diuretic, it is a stimulant of intestinal action, it is a tonic and appetizer, generally beneficial to nutrition, and it is a stimulant to unstriped muscular *fiber*

Q—Would you regard it as a uterine tonic or medicine? *A*—It i

Q—Doctor, would there be any advantage in combining those two medicines in a liquid form, we will say to the extent of 60 grains to the fluidounce of *viburnum prunifolium*, and six grains to the fluid ounce of carduus *benedictus—no, just* the reverse, carduus benedictus 60 grains, and six grains of viburnum prunifolium? *A*—There might be in some cases I think there would be generally

Q—Have you any opinion as to the value of that medicine in that combination, in a fluidextract of 20 per cent alcohol? *A*—It would be a useful medicine

Q—For what conditions? *A*—For the conditions that I have just stated, especially in regulating the blood pressure, what we call a vaso motor regulator

Q—Doctor, *is there any* danger in giving that medicine, which we will say *contains 48 drops* of alcohol to the dose in that diluted form the dose being a tablespoonful three or four times a day, to a girl or a woman suffering with some female trouble? *A*—Well, I would not—

Q—I mean, on account of the alcohol that is in it? *A*—No, sir, there would be none

Q—Would there be any danger of creating a habit because of that amount of alcohol *in it*? *A*—None

Q—Why not, doctor? *A*—Because that is the basis of all the pharmacopeial medicines It is the basis of the materia medica that is, the alcoholic preparations contain about that amount of alcohol or some more I think none of them contain less than that

Q—Would that amount of alcohol have any—given to a girl per dose—have any effect in stimulating or arousing her passions? *A*—No sir

Q—Doctor, how would a medicine of that character act *in a case of* uterine prolapse, which did not require a surgical operation? *A*—Its general tendency would be beneficial

Q—How would it bring about that result? *A*—Why, by increasing the nutrition of the muscles, and toning the muscles up, so that they would support the uterus better

Q—Doctor, can a medicine be both a tonic and a sedative? *A*—It can

Q—Is this particular medicine both a tonic and a sedative? *A*—The combination, or one alone?

Q—The combination? *A*—The combination would be both *tonic* and sedative

Q—Doctor, have you ever written about carduus benedictus prior to being told of this case? *A*—Yes, sir

Q—Were your opinions the same as you have expressed here? *A*—Yes sir

Q—Doctor, in your capacity as examiner of the purity of drugs that come into the United States through the port of New York, have you ever had occasion to observe whether any carduus benedictus comes in? *A*—Large quantities of it, yes, sir

Q—Large quantities? *A*—Yes, sir

Q—Have you had occasion to observe where it goes in the United States? *A*—Yes, it goes into the general trade

Q—What do you mean by "the general trade?" *A*—Why, the large drug houses get it and keep it in stock for sale

Q—Doctor what is the significance of a drug being named or appearing in the different pharmacopeias of the world? *A*—Why, it is an indication that they are believed to have therapeutical value, and that they are in general use I would like to change that and say, in common use The use need not be general, that is, it need not be everywhere, but it must be commonly used

Mr Hough—Take the witness

CROSS-EXAMINATION BY MR T J SCOFIELD

Q—Doctor, you have not practiced medicine have you? *A*—Yes I have

Q—How much? *A*—I stated that

EXPERIENCE OF THE WITNESS

Q—Well, state it again *A*—I practiced medicine, I think, for about two years and a half

Q—Where? *A*—In the New York City Lunatic Asylum for Women

Q—Where else? *A*—And on two exploring expeditions in South America

Q—How many people were on the exploring expeditions? *A*—On one I think we had about 30 Well, we had more than 30 but there was 30 in the regular party, and in the other I practiced medicine on the establishments which I visited, the plantations

Q—How many women did you have in the expedition of 30? *A*—Did not have any

Q—How many women did you treat on those expeditions, or either of them? *A*—Why, I think two or three hundred

Mr Hough—I do not think the witness understood the question

Mr T J Scofield *Q*—I say, how many women did you treat on those expeditions that you spoke of, the two expeditions? *A*—I should think about 200 or 300

Q—Women? *A*—Yes

Q—Who were they? *A*—People of the establishments that I visited, the rubber stations, and the haciendas of those plantations

Q—Did you carry medicines with you? *A*—A very large stock yes, sir

Q—Did you treat any women for uterine troubles? *A*—No sir they do not treat them for that down there They only allow women to treat women down there Men are not allowed to treat women for diseases of women in South America

Q—Did you ever treat any woman for uterine prolapsus? *A*—No, sir

Q—Did you ever treat any uterine troubles at all? *A*—Oh, yes

Q —How often? *A* —Well, I could not tell you that

Q —Where was that in the lunatic asylum? *A* —Yes, sir, we had an enormous quantity of it there

Q —Did you give them your personal attention? *A* —I was clinical clerk and I had to record everything that was done

Q —I am asking you whether you treated them, or whether you were simply the agency for making the records? *A* —I was the agency for making the records

Q —So that is as near the treatment as you have been? *A* —Yes, sir

Q —Now then, you say that viburnum prunifolium will act on what? *A* —I say it will act on any spasmodic condition of the intestinal organs

Q —Did you say that it would act on the muscles? *A* —Yes sir

Q —What muscles would it act on? *A* —Muscles of the intestines, the uterus muscles of the blood vessels and of the stomach

Q —What muscles would it act on to cure uterine prolapsus? *A* —It would act on the muscles of the ligaments

Q —What ligaments? *A* —The ligaments that support the uterus

MUSCLE FIBERS IN THE LIGAMENTS

Q —In what way would it act on those muscles? *A* —By increasing the strength and vigor and nutrition of the muscular fibers

Q —How many of those ligaments if any, contain muscular fiber? *A* —They all contain some

Q —To what extent do they contain it? *A* —How, is that?

Q —To what extent is there muscular fiber in the ligaments of the uterus? *A* —The extent differs at different times

Q —Tell us about it? *A* —During pregnancy there is a great increase in them

Q —In the number? *A* —In the number and in the size

Q —Of what? *A* —Of the muscular fibers

Q —What kind of muscular fiber is it? *A* —Unstriped

Q —In the ligaments? *A* —Yes sir, and in the uterus

Q —What ligaments are you talking about? *A* —I am talking about the broad ligaments chiefly

Q —What say? *A* —I am talking about the broad ligament chiefly

Q —Which other ones? *A* —Well that is the principal ligament that gives support

Q —What are the names of the other ligaments? *A* —Well I do not know that I can give you the names of all of those ligaments

Q —The only ligament that you can give us the name of is the broad ligament? *A* —That is all I can think of at the moment

Q —You say that is unstriped muscle? *A* —I say it contains unstriped muscle.

Q —Don t you know that it is not unstriped muscle? *A* —No I do not

Q —Don t you know there are no muscles in it? *A* —No sir, I know there are

Q —Did you ever make a dissection of this broad ligament? *A* —I have

Q —How often? *A* —When I was a student in the laboratory

Q —How many years ago was that? *A* —That was in 1883

Q —You have never followed it up with a subsequent dissection? *A* —No sir

Q —You go on record here as saying that the muscles of the broad ligament are unstriped? *A* —I do

Q —You are the author of a book are you not? *A* —Not on muscles

Q —Are you the author of the National Standard Dispensatory? *A* —I am one ot the authors of that

Q —Hare Caspari and Rusby? *A* —Yes, sir

ACTION OF VIBURNUM

Q —Now Doctor what are the actions and uses of viburnum prunifolium? *A* —It is an antispasmodic it is a sedative It also acts as a bitter tonic to some extent It is largely used in warding off threatened miscarriage or abortion

Q —The action of viburnum prunifolium, doctor is a very feeble action isn t it? *A* —It is not

Q —It is not? *A* —No sir it is a very marked action

Q —What say? *A* —It is a very marked action

Q —Then you do not agree with this statement in your book contained on page 1714 The virtues attributed to viburnum prunifolium are as feeble as they are numerous You don t agree with that do you? *A* —No sir

Q —So that when you said that in your book, which you issued in 1908 you said a thing that was not true? *A* —I did not say it

Q —What? *A* —You have not drawn out yet that I said it

Q —Your name is on this book and you say that you are one of the *men*— *A* —Yes but it don t say that I wrote the whole book sir

Q —It don t matter whether you wrote the whole book or not *A* —It matters a great deal to me

Q —You don t agree with that? *A* —I don t agree with that, and I did not write that

Q —You don t stand responsible for that book? *A* —I do for my part of it.

Q —Do you stand responsible for this book that has your name on the back of it? *A* —I stand responsible for the part of it which I wrote and now since you have asked the question, I claim the right—

The Court —Does the title page show the portion of the work that was written by the witness?

Mr T J Scofield —No it does not.

The Witness —The preface shows it your Honor

The Court —I mean does the book show it? If it does let s have it

Mr T J Scofield —I don t think it does, your Honor, not so far as I know at least

Mr Hough —I guess the witness knows

Mr T J Scofield —He is one of the editors at least

The Witness —No, sir, I am not one of the editors, sir, I am one of the writers

Q —Well, one of the authors, or whatever you please *A* —I wrote a certain part of it, but it had no reference to the actions or uses of drugs at all That was done by Dr Hare

The Court *Q* —Is it stated in the book anywhere the part of the book that you wrote, and the part that your associates wrote? *A* —Yes, sir

Q —Do you recall just where the statement was made? *A* —It is in the preface, I do *not know* just what page

The Court —That is not necessary

The Witness —I can state it myself very clearly

Mr T J Scofield —Well state it for yourself *A* —I wrote every thing relating to the drugs themselves their botanical names, their titles and their descriptions their adulterants their constituents but at that point I stopped it, and Dr Hare took it up, and wrote the articles on their uses

Q —Then you only feel qualified to testify as to those things?

A —As far as that book is concerned

Mr Hough —I object to that

Mr T J Scofield *Q* —Then, doctor, I will ask you this Do you agree with this statement—

The plaintiffs here objected but later withdrew the objection

Mr T J Scofield —(Reading) It is an ingredient of many proprietary preparations vaunted as uterine sedatives but the experience of most physicians fails to justify a belief in the qualities claimed for it " Do you agree with that?

The Court —No, no, did you write it?

A —I had nothing to do with it, and I do not agree with it

Mr Hough —What edition is that you have there?

Mr T J Scofield —I am reading from the 1909

Q —Doctor did you write that part of this book—

Mr Hough —What page?

Mr T J Scofield —that relates to carduus benedictus?

A —The part which related to its description, I did The part that relates to its action and uses I did not

Q —You did not say anything about its actions and uses or the book does not does it? *A* —Not in that book no sir I did not say anything about it

Q —There is nothing said in that book about its action and uses is there? *A* —That I cannot tell you

Q —Excepting that it is a bitter tonic? *A* —That is something I cannot tell you If Dr Hare wrote it I do not know it I paid no attention to that part *of the book, sir* I *had nothing to do with it*

Q —Doctor what is it that you say has a tonic effect on unstriped muscles? *A* —I said blessed thistle did

Q —Well that is carduus benedictus, isn't it? *A* —Yes sir

Q —On what do you base that statement? *A* —On the reputation of the drug in the literature I have not used it myself for that purpose

Q —Will you tell us the name of an author or an article that was ever written by any person of any standing or anybody at all who has said that carduus benedictus has an effect on unstriped muscle? *A* —In those words?

Q —Yes? *A* —No sir

Q —Or words in substance that? *A* —Yes sir

Q —Who? *A* —Hale and King s Dispensatory I have given the action of it and the action which they give must have worked in that way that is the only way it could work in

Q —That is a deduction doctor? *A* —That is a deduction

Q —I am wanting to know what they said *A* —I cannot give you the wording the precise wording, but what they have said about it involves that effect.

ALCOHOL CONTENT

Q —Doctor, what was it you said about the alcohol content in medicines generally speaking? *A* —I said there are none of the alcoholic preparations of the pharmacopeias that contain less alcohol than this preparation you have spoken of 20 per cent is the smallest amount

Q —You mean per cent don t you, doctor? *A* —I do

Q —How about the question of dosage? *A* —Well the *dosage* is different with different things

Q —Well I am asking you about the dosage? *A* —Well what do you ask me?

Q —I want to know what the percentage of alcohol in the dosage of these different pharmacopeial preparations that you speak of or pharmaceutical preparations is as compared with the dose of Wine of Cardui? *A* —I do not know anything about—nobody has asked me anything about Wine of Cardui yet

Q —This preparation that is involved in this suit is supposed to contain 48 drops of alcohol to every dose *A* —That is about the dose of the tinctures of the pharmacopeia

Q —In the doses that they are used by physicians? *A* —Yes sir

Q —How about aconite? *A* —That is not one of them

Q —How much is there in a dose of the tincture of aconite how much alcohol? *A* —Will you ask that question again, I did not catch the question

Q —I say, how much alcohol is there in a dose of the tincture of aconite? *A* —Very little in a dose, inappreciable

Q —How much alcohol is there in a dose ot the tincture of nux vomica? *A* —Nearly, as I remember, about 27 drops

Q —Why don't you know that the dose is only five drops, doctor, the whole dose? *A* —You are talking, I think, of the fluidextract.

Q —I am talking of the tincture *A* —Well, I don't remember the percentage of alcohol in the tincture of nux vomica

Q —Don't you know that the dose is from 5 to 10 drops? *A* —I want to call attention to the fact that you are asking me about some thing I did not say I said, drugs of this class Now those drugs are poisonous drugs, which are given in very small doses

Q —You mentioned tinctures, didn't you? *A* —When I answered this question, I said drugs of this class

Q —Well, what drug do you refer to now? *A* —I should say tincture of columbo, and compound tincture of cinchona, drugs used for their bitter tonic properties

Q —Are the two drugs that you have just mentioned in the same class as viburnum prunifolium and carduus benedictus? *A* —In the same class as carduus benedictus, yes

Q —How about viburnum prunifolium? *A* —They are not in the same class

Q —Mention some that are in the same class with viburnum prunifolium where the alcohol content is as large? *A* —I do not think there is any other drug that is quite like viburnum prunifolium, except viburnum opulus Valerian is something like that

DOSAGE OF TINCTURES

Q —What is the dose of tincture of valerian? *A* —The ordinary dose is a teaspoonful

Q —How much alcohol is there in it? *A* —I think there is 75 per cent

Q —Don't you know, doctor, that the dose of that preparation is 15 drops? *A* —It is given sometimes in 15 drops

Q —Don't you know that that is the average dose? *A* —No, sir

Q —Do you say that it is given in teaspoonful doses? *A* —You have got an ammoniated tincture, and you have got the tincture, the ammoniated tincture is given in 15 drops, and the other 30

Q —I am asking about the tincture *A* —They are both tinctures

Q —Both of them? *A* —Yes, sir

Q —Is the dosage the same? *A* —No, sir, one is twice as great as the other

Q —I am speaking of the simple tincture? *A* —The ordinary dose of it, which is given, is sixty minims, one teaspoonful

Q —Do you know how much alcohol there is in that? *A* —I say, I think 75 per cent

Q —Do you know how much? *A* —About 75 per cent

Q —About 75 per cent? *A* —Yes, sir, which would give us about 45 drops

Q —Doctor, can you imagine, or can you name a single tincture where the dose contains as much as 48 drops of alcohol? *A* —Oh, yes

Q —What one? *A* —That is one that I have just given you

Q —Which one is that? *A* —That is the tincture of valerian, and tincture of columbo, which is given very often in teaspoonful doses

Q —What is the alcoholic content? *A* —Sixty per cent

Q —That would be 30 drops, wouldn't it? *A* —No, it would be 36 drops

Q —Can you mention one that contains 48 drops to the dose? *A* —I don't think there is any that has exactly 48 I think that the tincture of cinchona contains more than 48 drops to the dose

Q —How is that? *A* —I think the tincture of cinchona contains more than 48 drops to the dose, I think it is 90 per cent. of alcohol in that, a teaspoonful at a dose

Q —You don't profess to be certain about that, doctor? *A* —Well, it is pretty hard to remember all the strengths given in the pharmacopeia, off hand, but I am pretty sure of it

Q —Now you say that carduus benedictus is imported into this country pretty largely? *A* —Yes, sir

Q —When you say that, what do you mean? That is a relative term *A* —Well, I think I have seen several tons of it come in at a time, a very large number of bales

Q —How often have you seen that, doctor? *A* —Probably two or three times a year

Q —How? *A* —Probably two or three times a year, I should think

Q —Two or three times a year How many tons would you think a year? *A* —I could not possibly answer that question That would be purely guess work

Q —Just simply guess work? It is a matter of record, isn't it? *A* —I have not those records with me

Q —I say, it is a matter of record, isn't it? *A* —Yes, they are all recorded

Q —You knew you were coming out here to testify, didn't you? *A* —I did

Q —You knew what was wanted of you, didn't you? *A* —I did not know that that was wanted of me

Q —You had talked this matter over with Mr Hough a number of times? *A* —Not that matter, no, sir

Q —Never had mentioned that matter? *A* —No, sir

Q —Through how many years of that time have you noticed that carduus benedictus was coming into this country? *A* —Since 1907, that is the only time when I have examined drugs

Q —How is that? *A* —Since 1907 That is the only time that I have been examining these drugs

Q —Do you know where the carduus benedictus went to that came through the custom house? *A* —I don't know where each particular lot went to

Q —Do you know where any of it went? *A* —Oh, yes

Q —How many different consignees were there, do you know? *A* —No, sir, but it don't stay in the hands of the consignee The consignee imports it and sells it to a manufacturing house

Q —Who was the consignee? *A* —I could not tell you, I never—

Mr Hough —You know what?

A —I never know who the consignee is, sir

Mr T J Scofield —You don't know what became of it after it left? *A* —Yes, I do, because I know that it is for sale by the different manufacturing and jobbing houses, and so I know those manufacturers got it

Q —You know they must have got it all? *A* —Oh, no

Q —Do you know whether any of it went to Chattanooga or not? *A* —I do not know

Q —You don't know anything about that? *A* —No, sir

The Court *Q* —What is the size of those bales they come in? *A* —They differ in size, your Honor There is no regularity about the size of the bales Some come in sacks, and some come in pressed bales

The Court —You referred to bales and I wondered what the approximate size was

The Witness —I should have said packages, perhaps, packages We go by weight, however It is always the weight that is stated, and I know they were large

Mr T J Scofield *Q* —What would the packages weigh?

The Witness —I could not remember

The Court —You have estimated its weight at several tons, and I thought perhaps you could give us some idea of the size of the units approximately, and the number of units

A —No, your Honor There would sometimes be a very large shipment, and at other times a moderate shipment, and the size of the bales would differ in any case, according to who it came from

Mr T J Scofield —I think that is all I care to inquire

REDIRECT EXAMINATION BY MR. HOUGH

Q —Do you know whether those drugs are imported at any other port besides New York? *A* —I do not know that, except by hearsay

Mr Hough —I think that is all

DEPOSITIONS

Three depositions were then read into evidence

Adjournment was taken until Thursday, May 18, 1916, at 10 30 a m

May 18, 1916, Morning

TESTIMONY OF MR JAMES HENRY M'FALL

The Court met pursuant to adjournment Mr James Henry McFall was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr James Henry McFall testified that he has resided in Slayden, Tenn, for about eighteen years He has been cashier of the bank since 1911 He is acquainted with Mr J J Parrott, who lived about three quarters of a mile from his own residence He has known Mr Parrott for about eighteen years This is the same Mr Parrott who testified for the defendant Mr McFall testified that the general reputation of Mr Parrott for truth and veracity is bad in the neighborhood in which he lives From what he knows of Mr Parrott and from his reputation Mr McFall would not believe Mr Parrott under oath

CROSS-EXAMINATION BY MR T J SCOFIELD

On cross-examination Mr McFall testified that Slayden is a town of about 250 population He testified that he has had business transactions with Mr Parrott Mr Parrott owes him money, but it is not due He has lent Mr Parrott money twice since the bank has been there The last note was renewed a short time ago

The witness testified that Mr Richter came to Slayden as representative of the Chattanooga Medicine Co and made arrangements with him to come to Chicago, for which he receives a per diem with expenses

TESTIMONY OF DR WALTER R SCHUSSLER

Dr Walter R Schussler was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR WALKER

Dr Walter R Schussler testified that he is a physician residing in Orland, Ill He was graduated from the Bennett Medical College in 1889 He is a member of the Illinois State Eclectic Medical Society, the National Medical Association, and is an ex-member of the Illinois State Board of Health He has been professor of orthopedic surgery in the Chicago College of Medicine and Surgery Years ago he taught therpeutics at the Bennett Medical College He has been surgeon of the Wabash Railroad Company for 25 years

The witness testified that he does work in the Frances E Willard Hospital, the St Bernard Hospital, the Englewood Hospital, the Jefferson Park Hospital, etc He was a member of the state board of health from 1906 until 1913 When he graduated from the Bennett College it was an eclectic medical college

The witness testified that he practices both medicine and surgery, he is familiar with the diseases peculiar to women He stated that he has treated such conditions for 27 years About one fourth of his practice is among women He has treated them from puberty to old age He has performed operations on the female organs He believes that about 90 per cent of the diseases of women are nonsurgical

Dr Schussler testified that he has treated prolapsus medically, and has obtained good results from the use of medicine and general treatment He has used viburnum prunifolium almost daily for 27 years in the form of Lloyd's Specific Tincture He assumes the proportion of alcohol is about 40 per cent

Dr Schussler testified that he has read about carduus benedictus and has heard physicians discussing it He has not used it in his practice From what he has learned of it and from what he has read about it, he considers carduus benedictus a valuable remedy He taught therapeutics only during one session of the college year He understands the use of drugs in combination—synergistic action He does not pay any attention to the alcohol content of drugs which he prescribes He makes a distinction between alcohol as alcohol, and alcohol as a menstruum When alcohol is given as alcohol in the form of whisky it is given as a stimulant in doses of one half of an ounce to an ounce and a half Fifty or sixty per cent of whisky he considers is alcohol

The witness testified that he would not consider a drug or medicine containing 20 per cent of alcohol given in diseases of the female reproductive tract as deleterious by reason of the alcohol when these conditions were not surgical He stated that invariably he had good results with the use of viburnum prunifolium He has had no bad effects from the alcohol content in the preparation

Dr Schussler testified that he would consider carduus benedictus a tonic medicine, having a special effect on the portal circulation or on the uterus He prescribes 5 to 15 minims of Lloyd s Specific Tincture of viburnum prunifolium, or 5 to 15 grains of the powdered drug He has used viburnum in cases of uterine displacement which did not require surgical operation He believes that medicine will aid cases of inflammation such as endometritis and testified that a special tonic will assist in overcoming engorgement and restoring the natural function of the organ

Dr Schussler testified that women very frequently suffer pain at the time of puberty He treats such cases with medicine containing alcohol, and does not believe that the alcohol would have any tendency to heighten the passions He testified that he has never prescribed Wine of Cardui

The witness stated that there would be no toxic effect from the alcohol in a medicine similar to Wine of Cardui, and that if given to a girl at puberty it would not tend to give her an alcoholic habit He would not hesitate to give such a medicine to a girl at puberty He does not believe that all girls should take medicine at puberty, but they should take some when they have pain He does not think the medicine known as 'Wine of Cardui" would do a girl any harm He stated that there are many cases during the menopause that require medicinal treatment

Q —I am speaking now as you understand me not when the symptoms are accompanied with some disease like malaria or any other disease but from the symptoms that arise from this change of life itself Do you understand what I mean? *A* —The change of life usuall —

Q —Like morning sickness

Mr Hough —That is not right

Mr Walker —I get that mixed up On two occasions I have had a woman with change of life, pregnant, and I wish to withdraw it I am not engaged in miracles here doctor at all But I am speaking of the menopause and I want to know if there are any distressing symptom flushing of the face and so forth that accompany it for which medicines may relieve? *A* —There are.

Dr Schussler described some of the conditions which may occur during the menopause which may be treated medically He would consider medicines like Wine of Cardui to be general and special tonics Medicines containing the same ingredients would be indicated in the various conditions arising during the menopause He stated that a medicine similar to Wine of Cardui would be of assistance to the newly married woman and would not be harmful He would not consider that a medicine like Wine of Cardui would mask a cancer

The witness testified that he has not read the Home Treatment Book for Women issued by the Chattanooga Medicine Company, and that he is familiar with the conditions known as vaginitis There was then read to him from this book "that the most frequent cause of vaginitis is gonorrhea brought on by infection, sexual excesses or unhealthy discharge from the womb, ovaries, tubes or bladder" He stated that gonorrhea cannot be brought on by sexual excess or unhealthy discharge as mentioned The germ of gonorrhea must be present

The witness mentioned some of the various causes of vaginitis He stated that leukorrhea is a symptom of disease The treatment of gonorrheal vaginitis would include douches, rest, hygienic conditions and tonics He stated that in gonorrhea there would be no effect from the alcohol in a tonic containing 20 per cent of alcohol, it would not tend to increase the microbes He makes a distinction between alcohol given as alcohol, and alcohol which is a menstruum Eclectics prescribe in such conditions cimicifuga, gelsemium, digitalis, golden seal and sometimes viburnum

Dr Schussler stated that a woman can hardly ever tell if she has prolapsus She could not make a correct diagnosis of any of the female diseases If the womb was in reach of the finger she could determine that she had prolapsus She could tell that the difficulty was in the female organs without being able to name exactly the condition He stated that the information given by the patient is always important in arriving at a diagnosis

The witness stated that the injection of viburnum into the wall of the uterus in a mixture containing 40 per cent of alcohol and the fact that the uterus did not contract would not be any test of the efficiency of the drug when taken through the mouth in the treatment of female diseases The same was true of Wine of Cardui similarly injected The fact that pituitrin was injected and produced a definite action would not in his opinion, be any test that Wine of Cardui was inefficient when taken through the mouth In his opinion the fact that Wine of Cardui showed no physiologic action on animals under anesthesia would not be a test of its efficiency in illness of women when taken through the mouth

Dr Schussler stated that medicines are frequently indicated in pregnancy when there are symptoms accompanying pregnancy that indicate an unnatural condition A tonic would very often be indicated There are frequently nervous systems which occur during pregnancy when tonics and sedatives are indicated Viburnum would be indicated under such conditions, and viburnum would be decidedly indicated, he believes, in cases of threatened abortion In cases of pregnancy when menstruation may occur usually medicine is not indicated During pregnancy, he stated, child bearing may be made easy by toning up the general system If medicines are given for this purpose, 20 per cent alcohol as a menstruum would not be injurious by causing kidney difficulty, creating a habit, or by injury to the fetus Such a medicine would have no deleterious effect

The witness described some of the causes of sterility He described vicarious menstruation and stated that viburnum would be a good remedy to use under such conditions He stated that there is a relation between the breasts of a woman and the organs of generation, and in a general way by restoring the vital organs to a natural function the medicine might cause the breasts to be built up and assume their natural condition

CROSS-EXAMINATION BY MR. T J SCOFIELD

On cross-examination Dr Schussler testified that he has an office in Chicago and one in Orland He has cases at present in St Bernard's Hospital and one patient in the

Frances Willard Hospital The surgical cases are taken to St Bernards His district for the railroad is from Englewood to Essex He is an eclectic physician He usually buys the viburnum from Fuller and Fuller He gives it in capsules He gives Lloyd's Specific Tincture when he gives it as a fluid He does not carry it with him in his medicine case He does not always give it in the dosage suggested on the bottle, he sometimes gives it in larger doses, in fact, quite frequently It is his understanding that the same dosage of viburnum prunifolium does not meet all conditions In some conditions you would have to use one dosage and in other conditions you would have to use another dosage

Q—What is that, doctor? *A*—Some patients are very susceptible to the action of drugs, and in those cases a small dose will give better results, while in other cases, the patient is larger, the circulation is more active, and, consequently, I deem it necessary to give a larger dose

Q—Now, that—

The Court—How do you determine or discover that personal idiosyncrasy? *A*—I discover that by the general condition of the patient, for instance, the condition of the tongue, the condition of the circulation, the general vitality of the patient In some patients a large dose would cause nausea, the stomach would not tolerate it

Q—What I am getting at is this—you don't get that in the first instance? That is something you learn either from the patient or from your experience with that patient, after a while? *A*—No, not always, ye—

The Court—Tell me—make it shorter—can you tell the minute you see the patient, whether they are unusually susceptible to drugs or not, whether they need a large dose or a small dose? *A*—Usually we can tell whether they need the small dose or the large dose, but we cannot always tell the idiosyncrasy at once, that requires some time

Mr T J Scofield *Q*—Now, doctor, usually, if I understand you when you see the patient, you can tell whether you can give her a small dose or a large dose, you can usually tell that, can't you, when you see the patient? *A*—I can—I would arrive at my judgment.

Q—Yes? *A*—I cannot tell positively

Q—No Now then, I suppose also the size of the dose depends on the condition, doesn't it? *A*—It does

Q—Yes And you reach a conclusion as to the actual conditions by the examination which you make, I suppose? *A*—Yes, sir

Q—That is *not only* by your physical or digital examination, but taking into consideration also those subjective things which you say form a part of the diagnosis, taking all that together, then you reach your own conclusion as to whether the dose should be large or small? *A*—I do

Q—Now then, what are some of the conditions, doctor, that you might find in the treatment of which you might require a large dose? Oh, just a few, it doesn't matter about how many *A*—In conditions where the stomach seems to be healthy and in conditions to assimilate the drug readily, and thereby obtain the physiological effect of the drug, I deem that it can be given in larger doses, and perhaps obtain results sooner than I could if the stomach was irritable and the patient would be inclined—it would be inclined to nauseate the patient, and thereby perhaps do harm In those cases then we would give the drug in smaller doses, so that the stomach can be—can assimilate the medicine

Q—Then you do not think, do you, doctor, that it would subserve the purposes of your practice at least according to your view, if you should give uniformly to every patient and for every condition, the same amount of viburnum prunifolium, or any other drug? *A*—No, sir

Q—No You have found, as the result of your experience, that there is no common—no one certain amount that will answer in all conditions, or for all purposes? *A*—There is no fixed rule

Q—So that is your treatment, after you have diagnosed the conditions and become familiar with your patient, you give the dosage, or the size of dose, which your experience and your knowledge of the case indicates to you to be the proper one to give? *A*—I do, yes

Dr Schussler stated that the smallest dose would be five minims, and the largest dose would be about fifteen or twenty drops of the specific tincture Eight or ten drops would be an average dose, and the witness judges that of this there would be about four drops of alcohol He considers that amount of alcohol negligible It would be given about every three hours until there was indication to change the drug or until the patient recovered The length of time would depend on the illness with which the patient was suffering, and the duration of that illness Most of the time he prepares the medicine for the patients himself After the patient's treatment is completed he does not leave more medicine for him to take unless he gets sick again

Dr Schussler stated that he also uses gelsemium, golden seal and cimicifuga, prescribing the liquid more frequently than the powder He gets good action from the powder The dose of gelsemium which he gives depends on whether the patient is a child or an adult, and on the urgency of the condition Sometimes he gives gelsemium every two or three minutes until the antispasmodic effect has been obtained, sometimes this is obtained in fifteen or twenty minutes In a small child of 4 or 5 years of age he would give two drops to a teaspoonful of water in a single dose This would be repeated every five minutes until convulsions subsided He usually gets results in an hour's time The patient would have twenty-four drops in that time, of that about eight or nine drops would be alcohol He would administer the specific medicine of gelsemium to adults in five to eight drop doses in one dram of water This would be given once every two or three hours until the physiologic effect manifested itself He usually prepares about half a tumblerful—about 4 ounces—and in this there are about fifty drops of alcohol The patient gets twelve doses in twenty-four hours, this would be continued another twenty-four hours if necessary He considers the amount of alcohol negligible

The witness testified that he gives nux vomica in smaller doses He has had no personal experience with carduus benedictus He knows of the *Eclectic Medical Journal* He is not acquainted with Dr Felter, the editor, but is acquainted with his predecessor, Dr Scudder He reads the journal occasionally He would give some weight to the opinions of Drs Felter and Scudder expressed editorially He did not read the article on cnicus benedictus published October, 1915

The witness spoke of the action of drugs in combination as synthetic action The effect is usually good when the drugs are compatible (He stated "you get the action of the drug by giving half the dose that is ordinarily given when the drug is given by itself") You get the sum of action of the two drugs This he considers the same as synergistic action

Whereupon the case was adjourned until 2 o'clock p m of the same day

May 18, 1916, Afternoon

The Court met pursuant to adjournment Dr Walter R Schussler resumed the stand as witness for the plaintiff in rebuttal

FURTHER CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he prescribes in various conditions according to the cause He does not always prescribe the same dosage There was described to the witness a hypothetic case in which the patient could feel the cervix or mouth of the womb about an inch from the outside, this condition having existed for a period of four years He stated that neither viburnum nor carduus benedictus, nor the best combination of the two in a 20 per cent menstruum of alcohol, could lift that uterus to its proper position inside of three weeks or any other time

REDIRECT EXAMINATION BY MR WALKER

Q—A derrick could not do it, could it? *A*—No sir

Q—For how long a time do you think a woman would know that her womb was in that position herself, if it had run for four years? *A*—Perhaps within a week or ten days

Q—After it started? *A*—Yes

Q—So that she would know all about that condition for nearly four years? *A*—Four years

The witness then stated the various symptoms which would accompany such a condition, and testified that a tonic would benefit the patient Douches, medical treatment, the knee chest position or other positions would be of benefit

The witness stated that in prescribing nonpoisonous drugs not much attention is paid to the dosage as with poisonous drugs It does not make much difference unless the patient has nausea and if not too vast an amount is given, if the drugs are nonpoisonous

UTILIZABILITY OF ALCOHOL

Dr Schussler was asked if he knew The Journal of the American Medical Association and he had read an editorial in The Journal for December 11, 1915, on the subject of utilizable alcohol He had not read the article Mr Walker then offered in evidence a query and minor note from The Journal, p 2108, on the subject of utilizable alcohol The query and minor note follows

> 'To the Editor—The amount of alcohol which can be oxidized by the adult human being in 24 hours, that is, serve as a food has been determined by a physiologist and formulated into a law Can you inform me concerning the name of the physiologist and the amount of alcohol that can be utilized? S C Mecklin, M D Pittsburgh

"Answer —The maximum dose of alcohol has been estimated at 15 grams per day Such an amount can be taken without causing the alcohol tension in the blood to become so high that more than the usual amount will be excreted in the kidneys and lungs It has long been known that 90 per cent of alcohol ingested is burned in the blood Atwater and Benedict within the last few years have determined that as much as 99 per cent of alcohol ingested undergoes combustion in the organism when the amount of alcohol ingested per day is equal in quantity to that contained in six ounces of whisky It is well known that alcohol tolerance depends largely on habituation of the individual to this substance In other words greater combustion of alcohol occurs in the tissues of a steady drinker than in the habitual abstainer We are unable to find any reference to the formation of a law for the determination of the alcohol utilized in the human body"

DEPOSITIONS

Thirteen depositions were then read in evidence

Whereupon an adjournment was taken until the following day May 19, 1916, at 10 30 a m

May 19, 1916, Morning

TESTIMONY OF DR EFFIE L LOBDELL

The Court met pursuant to adjournment Dr Effie L Lobdell was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR WALKER

Dr Lobdell testified that she is a physician and surgeon residing in Chicago She graduated from the Ft Wayne College of Medicine in 1891 Soon after she received an appointment to the staff of the Hospital for the Insane at Kankakee She worked one day a week in examining cases and had in her care 200 to 500 cases each day Later she studied in Vienna She was eight years on the staff of the Mary Thompson Hospital, five years on that of the Frances Willard Hospital and four years in the Cook County Hospital She was at one time herself superintendent of a hospital and taught in that institution She is not now regularly connected with any hospital but attends patients in the various hospitals She practices especially in obstetrics and women's diseases During the month of March she had 150 cases of which 13 were operative and ten were obstetric She treats daily from four or five to twenty-five patients

She testified that she has been called in many girls' schools and stores and that many of the dry goods stores keep medicine for the relief of young women Objection to this question was made and overruled

Dr Lobdell stated that she has performed the cesarean operation and is familiar with cancer She has treated female diseases from the age of four to late in life She has treated women during puberty, pregnancy and the menopause

Q —Doctor is there anything peculiar as distinguished from other pain and conditions generally of the pain that accompanies either young girls or women at the time of the monthly periods? *A* —Yes sir it is a peculiar kind of pain

Q —Just please tell me what you mean by that? *A* —Well it is I should say different from the pain of any other part of the body or any other class of symptoms It is a spasmodic and of neuralgic character such as we understand to be neuralgic in character It is quite different from other pains

Q —Would all women who require assistance for some disturbance of the female functions — what proportion of those are surgical cases as distinguished from medicinal cases? *A* —Rather a small percentage, considering the entire number that require attention

Dr Lobdell stated that 10 or 15 per cent of the cases require surgery She testified that 90 per cent of the young girls suffer pain and other distressing symptoms at the time of puberty

Q —Doctor in that 90 per cent where those symptoms are present do they require or is it legitimate to give medicinal treatment? *A* —It is

Q —Take instances of that kind what do you give? *A* —My most common remedy is viburnum compound or combination the viburnum — simply a combination in which viburnum is one of the principal ingredients

Q —Have you ever used Hayden s Viburnum Compound? *A* —Yes sir before other ones were perfected

Q —What percentage of that was alcohol? *A* —Hayden s is 50 per cent alcohol

Q —You understand doctor do you that I am speaking of the epoch of puberty? *A* —Yes, sir

Q —Now, take those cases, what consideration if any do you give to the alcohol? *A* —Nothing at all, only that it is rather, I think, a good thing at that time

Q —Now, Doctor, have you used any other drugs containing alcohol in various conditions for female distresses and troubles? *A* —Yes sir, in combination, like the Helonin Compound or Liquor Sedans of Parke Davis & Company, and there are various good preparations on the market made by the various pharmaceutical houses, which I think are better than the usual prescriptions

Q —What was the first one you named? *A* —Helonin Compound

Q —What alcohol does that contain? *A* —That contains about 48 per cent, I think

Q —What was the other please? *A* —Liquor Sedans

Q —What does that contain? *A* —That contains less, about 28 per cent

Q —I don t know whether you used those in cases of distress at puberty or not? *A* —Yes, sir they all belong to the same class of remedies

Dr Lobdell testified that when she was on the staff of the Insane Hospital, there were many cases where the mental conditions were due to pelvic disturbances These were treated medicinally and many of them relieved Dr Lobdell testified that she is actively interested in cases where women are brought into court She helped introduce the examination of girls in the Juvenile Court, Morals Court and Criminal Court, etc She was president of the Women's Club of the City of Chicago until this year She is a member of the Chicago Medical and Illinois State Medical Societies She was formerly a subscriber for The Journal

Mr Walker *Q* —What medical journals doctor, do you subscribe for in your reading of the medical journals? *A* —Well I only subscribed for the last year, I think for two, the *Johns Hopkins Experimental Medicine* and *Clinical Reports*

Q —Do you get any German or Italian studies on that subject? *A* —No, my textbooks are German I have German textbooks

Dr Lobdell testified that she has treated prolapse of the uterus satisfactorily by medical measures in cases which did not require surgical measures She has always considered that viburnum prunifolium has therapeutic value and still uses it Recently at the request of Mr Walker, she has informed herself concerning carduus benedictus She has an opinion not from her reading but from consulting with a German pharmacist on the North Side who prepares it for physicians The Court ruled that such evidence was incompetent She formed no opinion from her reading

There was then described to the witness the experiment performed by Dr John Clarence Webster She stated that she would not expect the uterus to show any reaction because the fluid injected was an antispasmodic The Court ruled that this was not the correct answer to the question The witness then answered that in her opinion such an experiment was no proof that the drug injected had no therapeutic value when taken by mouth

Mr Walker *Q* —Doctor, suppose that same substance was injected into a dog or other animal through the respiratory or circulatory system or while those were being watched would the fact that nothing was observed in that connection be any evidence in your opinion as to whether that drug was of therapeutic value or that compound of therapeutic value upon a sick woman?

Mr T J Scofield —That is objected to for the same reason

The Court —She may answer

To which ruling of the Court the defendants etc excepted

A —I would not know because I am not familiar with the use of drugs on the lower animals

Dr Lobdell stated that the giving of the hypothetic medicine to a girl at puberty would not she believed, heighten the passions The Court ruled that in the future questions the cnicus benedictus be eliminated as the witness stated that she knew nothing about it

Dr Lobdell stated that she considers the alcohol in 20 per cent solution 48 drops to a dose, is negligible The witness stated that a tonic would frequently be indicated for the symptoms accompanying pregnancy, that there are no objections to alcohol in pregnancy in moderate doses

Q —Do you know anything about the giving of wines or gin and champagne to women during those periods? *A* —Yes sir It is sometimes not only necessary but we do it as a sort of diet where we want to control the size of the child and various things of that sort

Q—When you were in Europe, Doctor, did you notice whether or in pregnancy any stimulants of that kind were given? *A*—They allowed, the wines of the country, clarets and beers, light beers as a part of their diet

Q—Take the medicine that I have alluded to, and state whether or not in your opinion that would have a detrimental action, if given in those doses, on the kidneys of a woman when she was in that condition? *A*—No, sir, it is not known to have

The witness stated that some cases of sterility may be treated with drugs given by mouth There is an intimate connection between the breasts and the genital tract in a woman, she stated, and she would expect a tonic to have an effect on the breasts by toning up the system She distinguishes between a tonic and a stimulant by the time which it takes it to act, the stimulant gives immediate action, a tonic has a continued effect In her opinion, a drug may be both a tonic and a sedative, examples are viburnum and alcohol The witness stated that in her opinion, a tonic medicine containing 20 per cent alcohol, 48 drops to a dose, would not mask the symptoms of cancer

Dr Lobdell prescribes hygienic treatment for slight prolapse She stated that in vaginitis, antiseptic douches are indicated She stated that in metritis and endometritis, medicines are given by mouth to counteract the disagreeable effect of these conditions and that medicines of the class of viburnum prunifolium are usually prescribed She gives medicines combined, as the combined action of the two gives less necessity for large doses The witness stated again that alcohol in a solution of 20 per cent in the dosage of 48 drops would not, in her opinion, increase the passions of a young girl

Mr Walker *Q*—Why not, doctor? *A*—In the first place the ingredients themselves are antispasmodics and when a young girl is having the distressing effects of an approaching menstruation, she is over stimulated naturally, that is the physiological condition If it is extreme, it of course is distressing and any drug, any antispasmodic or anything given that would relax and relieve the internal congestion and bring the blood to the smaller vessels, particularly the skin (which is controlled by the same set of nerves practically as the internal organs), she would be relieved of those distressing symptoms and it would be a sedative in her case

Q—Independent of the medical feature, doctor, of the thing, what are the usual home remedies, if you know, in those cases? *A*—Well, I suppose the most common remedy is gin

At this point defendants' counsel objected but the objection was overruled

The witness stated that sexual excess without the presence of a germ cannot produce gonorrhea

The Court—Is there any doubt about that?

Mr Walker—I do not know

The Court—It seems to me that all the witnesses for the defendant testified that that was a germ disease

Mr Walker—Well, this seems to say that gonorrhea is brought on by sexual excess I want to be able to go to the jury on the lack of grammar in this sentence, when the time comes, and explain it

The Court—It is not disputed You can attack the grammar of that book as much as you please, the English, rather

Mr T J Scofield—We have no fault to find with its grammar and no contention to make either way

Mr Walker—I understand what your contention is

Mr T J Scofield—I do not know whether you do or not

Mr Walker—Well, I will make an attempt at it and I think the jury will understand me when I say that I shall get—

The Court—The jury and I will take another recess, gentlemen, if you don't get busy on this case

Mr Walker—All right, Your Honor, will pardon me for just a moment

Dr Lobdell then stated some of the disagreeable symptoms accompanying the menopause, and stated that the hypothetic medicine would be more apt to be beneficial than otherwise The witness stated that tonics are indicated in amenorrhea, dysmenorrhea, menorrhagia, and metrorrhagia and that viburnum prunifolium would be one of the remedies indicated This remedy in a solution containing 20 per cent alcohol given in a dosage of 48 drops would not be detrimental

Viburnum prunifolium, Dr Lobdell stated, would be a proper drug for threatened abortion and that the fact it was in 20 per cent alcohol, a dosage of 48 drops would not make it objectionable

(To be continued)

Correspondence

The Pay Consultation Clinic at the Massachusetts General Hospital

To the Editor—Two reasons led to the establishment of the pay consultation clinic which was opened at the Massachusetts General Hospital, Jan 25, 1916 One was the desire to make the facilities and staff of a large general hospital available to the practitioner in his care of patients of moderate means The other was to enable this group of patients to obtain the benefits of a complete range of skilled advice and expensive equipment at a fee within their reach

It is intended that both the family physician and his patient shall be benefited If not accompanied by his physician the patient is required to bring a letter from him, which is a guarantee that the person to be admitted belongs in the group for which this clinic is intended Experience with the 700 patients so far received shows that the family physician is making legitimate use of the opportunity Two or three patients outside of those "of moderate means" have been noted, but it is expected that even this small number will be reduced by the consideration of the doctor who asks for a diagnosis and advice

After a sufficient number of visits has been made for the clinic physician to establish a diagnosis, a letter is sent to the family physician summing up the opinions of the consultants, together with the evidence given by the Roentgen-ray department and laboratories The treatment that seems advisable to the consultant is suggested to the patient's physician The patient is not treated, and after the diagnosis is made he does not return except at the request of his physician Each of the New England states has contributed its interesting and difficult cases to the total of over 700 patients so far seen in the clinic

The clinic seems to be a concrete expression of thoughts that have existed in the minds of some of the more progressive men in and outside of the profession of medicine

Before the consultation clinic was established, the opinions of 100 representative physicians and surgeons in and around Boston were ascertained regarding such a step The sixty replies received endorsed the idea without exception

Recently fifty-nine replies have been received from letters sent to physicians who have sent cases to the clinic One has considered it a failure, fifty-eight have found it of great help and expressed their appreciation of it, and ten of this number have made some minor suggestions by which the clinic could be made of still greater assistance to them

Algernon Coolidge, M D, Charles A Porter, M D,
Richard C Cabot, M D, Charles L Scudder, M D,
David L Edsall, M D,
Frederic A Washburn, M D, Secretary,
General Executive Committee

Blood Transfusion Apparatus

To the Editor—Noting your article on methods of blood transfusion (Therapeutics, The Journal, June 17, 1916, p 1923), may I call attention to the advantages of the Abelmann syringe method which you illustrate? This simple instrument makes it possible for one operator to transfuse blood with certainty and ease I have performed over a thousand blood transfusions, without any assistance whatsoever The apparatus is also admirably adapted for administering salvarsan With all my transfusion work, I have had no fatalities and during the past year have had no alarming symptoms develop as the result of administering incompatible blood The biologic test for blood incompatibility developed by this method is more delicate and reliable than the laboratory tests, and can be made in a few minutes The blood is taken at chosen intervals, giving such measured quantities as the condition warrants The results obtained in treating certain chronic conditions in this way are better The donors are also safeguarded and suffer no ill effect The danger of transmitting disease from the patient to the donor is eliminated The danger of air and clot emboli, as well as thrombosis and infection is nil The rate of flow of blood into the patient's vein is under absolute control The simplicity of method and apparatus eliminates technical difficulties, and places the transfusion of blood in the hands of the general practitioner, widening the field of its usefulness The apparatus is compact, can be carried in the coat pocket, is easily sterilized and prepared and can always be kept ready for immediate use The method requires no cutting, and consequently there will be no offensive scars, no destruction of blood vessels and nerves, and no wasting of blood Ambulatory patients can be treated in the physician's office in a short time Donors are readily secured on account of simplicity, safety and convenience Recipient and donor can be in separate rooms The operation requires no speed or dexterity On the whole, therefore the syringe method should appeal to the average physician as the mos [illegible] le routine method

HENRY W ABELMANN, M D, Chicago

Esophageal Stricture

To the Editor —In a recent issue of THE JOURNAL (April 15 1916, p 1198), Dr Anthony Bassler states that the surgeons failed to give him the aid and comfort he expected, in a case of esophageal stenosis

I have noted no answer to the letter, and as the same trouble may occur to others, and the measures to obviate it are simple, I am giving three methods, any one of which would be efficient in such a case, but of which some one might appeal more than another to the individual case, or operator

1 The oral end of the cord may end in a material which the child cannot bite through—leather, wire or chain

2 The oral end may be fastened by a dental ring to a tooth, the ring being easily removed by the physician

3 The simplest means of all, which is applicable to the largest number of cases, is to bring the upper end through the nasopharynx, and out through the nose, where a piece of adhesive plaster would anchor it

Probably other men would give other methods

FREDERICK S WEINGARTEN, M D, New York

Request for Surgical Instruments

To the Editor —Mrs Russell A Alger, Jr of Detroit has just returned from a trip to France While there, she visited many hospitals, especially throughout Brittany, where thousands of wounded soldiers are being treated Everywhere she heard a most urgent cry for all kinds of surgical instruments, especially in the hospitals of the country

Mrs Alger has asked me to request you to appeal with all the earnestness and publicity you can to the physicians throughout the land to donate any instruments, no matter how simple, which they have no further need of or may spare the same to be sent to Mrs Russell A Alger, Jr, 2039 Penobscot Building, Detroit, Mich, from which place they will be forwarded without expense to the donor to France, to be distributed to the hospitals most in need of them

Permit me to add my personal appeal to you to lend your influence to this cause. The need is urgent and the gratitude of thousands of soldiers awaits your action

ANDREW P BIDDLE, M D, Detroit

Inhibitory Properties of Magnesium Sulphate and Their Therapeutic Application in Tetanus

To the Editor —I have discovered an important omission in my article on this subject (THE JOURNAL, March 25, 1916 p 931), an omission which may have practical consequences On page 934, second column, the first paragraph of the summary reads 'In each and every case of tetanus, 1 2 c c. of a 25 per cent solution of magnesium sulphate should be given by subcutaneous injection,' etc It should read "1.2 c.c of a 25 per cent solution of magnesium sulphate *per kilogram body weight*'

S J MELTZER, M D., New York

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address but these will be omitted, on request

ADVISABILITY OF FAMILY USE OF PATERNAL AUTOGENOUS VACCINE

To the Editor —In a family of four, who had previously been exceptionally healthy, four months ago influenza developed in very acute form Since that time there have been recurrences in all of the family In the girl of 12 there was unusually severe nosebleed In the boy of 6 there was intestinal hemorrhage There has been double external ear abscess in two of the family peritonsillar abscess in one and something very nearly akin to multiple neuritis in two In one of these the condition simulated erythema nodosum with intestinal involvement In this one there have been several articular inflammations during these months In such a family would it be good treatment to use in the other members of the family a vaccine made from the father's nostrils throat and ears, during a time when he had an acute attack of pharyngitis with involvement of eustachian tubes and just after external ear abscesses had been lanced?

A C B

ANSWER—The family epidemic here described is apparently similar to many others which have occurred throughout the country in the past months In those which have been investigated bacteriologically, the organism most frequently found has been a hemolytic streptococcus, the term "influenza," of course, is meaningless The complications, such as articular inflammation and erythema nodosum here described, are also those which have commonly been found in streptococcal infections

Recurrences of the symptoms of infection suggest a lighting up of the original infection, which has probably persisted, partially protected in some part of the patient's body Each patient should be carefully studied, and if any local collection of pus in a small persistent tonsillar abscess, or in the ear, is found, this should be drained If one will think of the relation of such a small deep seated abscess to the surrounding tissues, one would not expect to accomplish the drainage of the pus by the injection of vaccines into some other part of the body, but would rather attempt to relieve tension and absorption from this abscess by incision When the focus is removed improvement follows without the use of vaccines

In patients with severe and extensive infections such as those described, recovery is largely a matter of increasing resistance to infection by improving nutrition, and where this is possible, by the eradication of areas in which the infecting organism is growing Vaccines have accomplished much in the prophylaxis of disease such as typhoid fever, but careful clinical observers have not found that favorable results can be regularly anticipated from the use of vaccines in situations such as those described

For these reasons it would not be good treatment to inject into other members of the family a vaccine made from the father's nostrils throat and ears during an acute attack of pharyngitis even assuming the father to be suffering from the same infection as other members of the family Such a procedure is undesirable because it probably will do no good and may do harm

HEAT CRAMP

To the Editor —As a result of natural gas facilities we have many zinc smelters in this district The furnaces are extremely hot and consequently the furnace men are exposed to an almost unbearable heat After they are burnt in' however the heat does not seem to affect them Frequently a man takes on a "double shift or does another's work and gets very hot for a prolonged time he naturally goes out after his work is done and imbibes freely of ice water This throws him into the most violent muscular contractions of the arms and legs The muscles knot up in huge cords and he goes down in a heap in apparently the most frantic agony The pulse is normal as well as the temperature The convulsive seizures come at intervals of from two to fifteen minutes, and in the severe cases are absolutely unaffected by any amount of opiates that will allow the patient to breathe Chloroform relaxes the spasms for the time being but they usually return again in a few hours The patients usually recover in from a few hours to a few days but a few have been lost apparently from exhaustion

This condition may not be new to those having experience with furnace men but I have never seen anything in the literature or books describing it or giving the pathology I desire an explanation or direction for data

P S MITCHELL M D Iola Kan

ANSWER—Heat cramp is produced by a combination of intense heat and hard work. The disease is more frequent in summer than in winter, and the use of alcohol probably plays a minor part as a predisposing cause The principal symptoms are well enumerated in the case described The condition has been ascribed to a deficient serosity of the blood with acute degenerative change in the muscles The prophylactic treatment is, of course, as much ventilation as possible where the men are working Cool oatmeal water or similar drink should be used rather than ice water For the acute condition morphin seems to be generally recommended, although, as noted above, opium in large doses may have little effect in some cases According to H M Welsh (The Journal, April 10, 1909, p 1179), apomorphin, in doses varying from 1/12 to 1/20 grain, will produce immediate relaxation, he has employed this remedy with success in the severer cases Warm baths are also recommended to relax the spasm

This subject was discussed in Queries and Minor Notes, The Journal, June 1, 1912, p 1706, and Nov 9, 1912, p 1734 The following are further references

Cameron, W H A Disorder Due to Exposure to Intense Heat, The Journal May 8, 1909, p 1483

Clendening L Muscular Spasms Due to Heat in Cooks on Pullman Diners, The Journal, May 7, 1910, p 1517

Edsall, D L *Tr Assn Am Phys*, xxiv, 625, *Wisconsin Med Jour*, 1910, p 425

Elliott, M S *Mil Surg*, xxii, 227

Mann, W L *U S Naval Med Bull*, October, 1912

Fiske, C N Effect of Exposure to Intense Heat in Working Organism, *Am Jour Med Sc*, April, 1913

Oliver, Thomas Dangerous Trades, New York, E P Dutton & Co, 1902, p 184

Anders Practice of Medicine, Ed 12, 1915, p 1296

INJECTION OF PASTE IN DISEASE OF HIP JOINT

To the Editor —I have a patient with tuberculous hip joint disease who was operated on some months ago The head and neck of the femur were removed at that time There is now evidently a relapse, and there is at the present time a discharging fistula in the inguinal region that is evidently draining the joint cavity The patient—a girl 8 years old—is in good general health with the possible exception of a rise of about 0 8 degree in temperature each day Would it be advisable to inject a paste through the fistula into the joint, if so, what kind of a mixture is being used in such cases at this time? The joint has been immobilized for the past month without apparent benefit In replying, please omit my name M J M

Answer —It seems quite evident from the foregoing letter that the tuberculous condition is still active, either in the joint or, more likely, in the bone Before determining on any line of treatment it would be desirable to make some good roentgenograms to show the exact location and extent of the involvement If sequestrums are still present, they may be removed before attempting to inject the sinus with paste If all the dead bone has been removed and the cavity remaining is not too large, the use of bismuth paste, 30 per cent of bismuth in petrolatum, sterilized and injected under proper pressure, may be tried The joint should then be completely immobilized over a long period, even after the sinus is apparently closed Many months are required for recovery to take place in these cases under the most favorable conditions

REGISTRY NUMBER ON PRESCRIPTION BLANKS UNDER HARRISON LAW

To the Editor —Does the Harrison Narcotic Law permit a physician to print his registration number on his prescription blanks? M F

Answer —Yes There is nothing in either the law or the treasury decisions thereunder which would preclude a physician from printing the registry number on his prescription blank Treasury Decision 2172 holds that a physician can use any blank that is properly dated and signed and has indicated thereon the physician's address, registry number, and name and address of person for whom prescription is written

TOXICITY OF ACETYLENE GAS

To the Editor —I use acetylene gas to read by, the tube of the lamp being connected to an acetylene tank After acetylene was turned on last night my throat troubled me and I coughed for a while My secretary detected an odor and seemed to think it was the acetylene gas that caused the irritation in my throat

C de P F, Peekskill, N Y

Answer —Pure acetylene is very slightly, if at all, poisonous The commercial product is generally prepared from calcium carbid and therefore contains such impurities as carbon bisulphid, carbon monoxid, each present to the extent of about 0 5 per cent, and phosphoretted hydrogen, 0 04 per cent It is therefore slightly poisonous The toxic effects of these impurities, even in larger quantities, is not such as to produce irritation of the throat Naturally, should the carbon bisulphid be present in an altogether abnormally large amount, which is unlikely, then sulphur dioxid formed by combustion would be irritating to the mucous membranes of the throat and nose as well as to the conjunctiva

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama Montgomery, July 10 Chairman, Dr W H Sanders, *Montgomery*

Connecticut Regular, New Haven, July 11 12 Sec, Dr Charles A Tuttle, 196 York St, New Haven, Homeopathic, New Haven, July 11, Sec, Dr Edwin C M Hall, 82 Grand Ave, New Haven, Eclectic, New Haven, July 11, Sec, Dr T S Hodge, 19 Main St, Torrington

District of Columbia Washington, July 11 13 Sec, Dr Edgar P Copeland, The Rockingham

Indiana Indianapolis, July 11 13 Sec, Dr W T Gott, 84 State House, Indianapolis

Massachusetts Boston, July 11 13 Sec, Dr Walter P Bowers, 1 Beacon St, Boston

New Mexico Santa Fe, July 10 Sec, Dr W E Kaser, East Las Vegas

Oklahoma Oklahoma City, July 11 Sec, Dr R V Smith, 502 Daniel Bldg, Tulsa

Pennsylvania Philadelphia and Pittsburgh, July 11 13 Sec, Mr Nathan C Schaeffer, Department of Public Instruction, Harrisburg

South Dakota Deadwood, July 11 Sec, Dr Park B Jenkins, Waubay

Vermont Burlington, July 11 13 Sec, Dr W Scott Nay, Underhill

West Virginia Charleston, July 11 Dr S L Jepson, Charleston

Colorado January Report

Dr David A Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Jan 4, 1916 The total number of subjects examined in was 8, total number of questions asked, 80, percentage required to pass, 75 The total number of candidates examined was 4, of whom 3 passed, including 2 osteopaths, and 1 failed Eleven candidates were licensed through reciprocity The following colleges were represented

College	Year Grad	Per Cent
PASSED		
University of Pennsylvania	(1915)	86 4
FAILED		
St Louis College of Phys and Surgs	(1915)	53

College	Year Grad	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Chicago College of Med and Surg	(1913)	Illinois
Hahnemann Med Coll and Hosp, Chicago	(1913)	Illinois
Indiana University	(1910)	Indiana
University of Louisville	(1894)	Missouri
Tulane University of Louisiana	(1906)	Louisiana
Harvard University	(1898)	Mass
University of Michigan Medical School	(1880)	Iowa
University Medical College, Kansas City	(1898)	Missouri
John A Creighton Medical College	(1910)	Nebraska
Startling Medical College	(1882)	Illinois
McGill University	(1894)	Minnesota

Idaho April Report

Dr Charles A Dettman, secretary of the Idaho State Board of Medical Examiners, reports the written examination held at Boise, April 4-7, 1916 The total number of subjects examined in was 11, total number of questions asked, 110, percentage required to pass, 75 The total number of candidates examined was 17, all of whom passed The following colleges were represented

College	Year Grad	Per Cent
PASSED		
College of Physicians and Surgeons, Los Angeles	(1905)	80
University of Colorado	(1911)	84
Northwestern University	(1911) 84, (1914)	82
University of Illinois	(1913)	83
Medical College of Indiana	(1905)	83
Keokuk Medical College, Coll of Phys and Surgs	(1905)	76
University of Louisville	(1905)	77
Beaumont Hospital Medical College	(1896)	79
Missouri Medical College	(1896)	84
National University of Arts and Sciences	(1914)	82
John A Creighton Medical College	(1909)	83
Medical College of Ohio	(1900)	83
Ohio Medical University	(1900)	80
Jefferson Medical College	(1914)	85
Medico Chirurgical College of Philadelphia	(1909)	85
University of Nashville	(1902)	79

Book Notices

Cancer of the Stomach. A Clinical Study of 921 Operatively and Pathologically Demonstrated Cases. By Frank Smithies, M.D., Gastro-Enterologist to Augustana Hospital, Chicago. With a Chapter on the Surgical Treatment of Gastric Cancer. By Albert J. Ochsner, M.D., LL.D., F.R.C.S., Professor of Clinical Surgery in the School of Medicine of the University of Illinois. Cloth. Price, $5.50 net. Pp. 522, with 106 illustrations. Philadelphia: W. B. Saunders Company, 1916.

This monograph is composed of twelve chapters, eleven of which, covering the general features of the subject, including the nonsurgical treatment are by Smithies and one chapter on the surgical treatment is by Ochsner. The opening chapter, on general distribution and etiology, contains many interesting facts regarding the distribution, but nothing that can be said really to touch the etiology. It is to be expected that a disease as prevalent as cancer, which occurs as a rule, after the individual has lived more than half of his expectancy, would be accompanied by many conditions such as healed tuberculosis, gallstones, syphilis, chronic infections, etc., without there being any causal relation between them, hence there is no sound reason for concluding that any of these incidental conditions bear any causal relation to cancer of the stomach.

The chapter on morbid anatomy is well illustrated, most of the gross specimens being from the Mayo Clinic, while the text follows closely that of McCarthy. Considerable space is devoted to symptomatology and examination, particularly to the examination of gastro-intestinal function. The author thinks there is no procedure which "enables one to estimate the status of a given case of gastric cancer so quickly, accurately and inexpensively, as does intelligent scrutiny of test meal data. There is no disease of the stomach per se which returns gastric extract analyses so characteristic as those exhibited in instances of what is clinically advanced gastric cancer."

One can easily agree with both of these statements, for in the first the diagnosis is assumed in "a given case of gastric cancer," and the second statement deals with "what is clinically advanced gastric cancer." When it comes to making a diagnosis in an early case, however, it is a different matter. In these cases gastric extract analyses fail to give definite results, as do all other present known methods of examination, except the microscope.

Concerning Roentgen examination, the author says: "It is well to admit that much of the positive information which x-ray examinations give us concerning the function or abnormality of the stomach can be as well obtained by routine clinical examination. In the majority of instances x-ray findings only concern what might be termed accidents in the progress of the disease process." By this the author means such features as stenosis, alterations in shape or position of the viscus with relation to adjacent organs, or deformities in outline. Until such complications occur, Roentgen findings may be entirely negative and the diagnosis must be made clinically or chemically. Concerning the taking of many roentgenograms (from eighteen to forty), the author says: "The perfection of the fluoroscope has rendered this method [roentgenographic plates or films] largely obsolete, tedious, of little added clinical worth, and unnecessarily expensive."

Concerning the significance of gastric ulcer and the so-called "precancerous history" with respect to a subsequent cancer, the author says: "So far as we can judge clinically a careful development of such history furnishes extremely valuable diagnostic and prognostic information. It would appear from the facts submitted that such interpretation allows the greatest degree of operative benefit with the minimum of operative risk." The surgical treatment of cancer of the stomach naturally relates to complete removal of all the cancerous tissue, and this phase of the subject including indications and operative technic is well covered.

On the whole the book is a well gotten up thorough exposition of present day knowledge of carcinoma of the stomach.

Medicolegal

Relation of Physician and Patient—Skill Required with Regard to Locality

(Viita vs. Dolan et al. (Minn.), 155 N. W. R. 1077)

The Supreme Court of Minnesota affirms a judgment against defendant Fleming for $2,000 damages for alleged malpractice in the treatment of a fracture of the plaintiff's left leg between the knee and ankle. The court says that defendant Dolan died after this action was commenced. The defendants were partners as physicians and surgeons, and operated a hospital. They had an arrangement with the company in the employ of which the plaintiff was when injured by which the company deducted 75 cents a month from the pay of each employee, and turned this over to the defendants who agreed for this compensation to care for and treat injured employees which the company should send to them. The plaintiff, after his injury, received a ticket from his employer, presented it to the defendants, and was taken into the hospital and treated. Defendant Dolan attended the plaintiff, who claimed that the failure to get a straight union was due to the omission of the defendants to apply an extension weight to the injured limb. Negligence was also claimed in respect to their failure to use a "fracture box" or to take a roentgenogram for diagnosis. Assuming that the relation of patient and physician existed, the court holds that the evidence was sufficient to justify the jury in finding that the physician failed to exercise toward the patient that degree of care and skill which the law requires. Nor were the damages awarded excessive. The defendants however contended that the relation of physician and patient did not exist, under the circumstances stated, but the court holds that it did, and that the defendants owed the plaintiff the duty to exercise ordinary care and skill in treating him. It was true, the court says, that the company under the terms of the workmen's compensation act, was required to provide medical and surgical treatment to the injured employee during the first ninety days of his disability and to an amount not exceeding $100. But the court is unable to see how this changed the relationship between the injured employee and the physician or surgeon employed, or affected the duty of the latter to the former. Moreover, a settlement between the plaintiff and his employer under the workmen's compensation act, by which the employer was released from all claims on account of the injury to the plaintiff, did not operate as a settlement or release of any claim for malpractice which the plaintiff might have against the physician who treated him. The court thinks it is plainly correct that the locality in which the physician or surgeon practices must be considered in determining whether he has the requisite skill and learning, but the court does not think that he is bound to possess and exercise only that degree of skill and learning possessed by other practitioners in the same locality, if by that is meant the same village or city. If the same general locality is meant, as for instance, the Northwest, or the state, no fault can be found with such a rule. But in these days the physician or surgeon in a village is not hampered by lack of opportunity for advancement. Frequent meetings of medical societies, articles in the medical journals, books by acknowledged authorities, and extensive experience in hospital work put the country doctor on more equal terms with his city brother. He would probably resent an imputation that he possessed less skill than the average physician or surgeon in the large cities, and this court is unwilling to hold that he is to be judged only by the qualifications that others in the same village or similar villages possess. It was not error to permit questions to the experts in regard to the propriety of taking roentgenograms. While this was not specifically alleged as a charge of negligence, the complaint contained a general allegation of negligent treatment, and the court thinks this evidence was properly received at least as against the general objection "incompetent, irrelevant and immaterial."

Delay in Discovering Pieces of Glass from Vaginal Douche

(Rogers vs Voorhees (N Y), 157 N Y Supp 330)

The Supreme Court of New York, Appellate Division, First Department, divided three to two, reverses a judgment for $2,628 28 which was entered in favor of the plaintiff, and grants the defendant a new trial It appeared that the defendant attended the plaintiff during her confinement at a maternity hospital The dissenting opinion, which gives the more details, says that, accepting the version of the facts which the jury believed, the plaintiff first began to feel intense, sharp pains in her body some ten days after the birth of her child, and told the defendant of her suffering on the very next day, June 26 She had been under his care for some time, and he knew, or should have known, of her general condition, and have been aware of any abnormal change in it He treated her for the condition which existed after the childbirth, and made an examination before she left the hospital, but could suggest no cause for her suffering, save the failure of the stitches which he had inserted to heal properly She complained of these pains, and of other conditions, beginning six days after her discharge from the hospital, which was July 7, and repeated the complaints three or four times during July The defendant was out of the city during August, but when he returned the plaintiff again called on him and complained of her pains and other disturbances He examined her, but discovered no reason for the condition, and it was not until the early part of December, after many apparent examinations, that the defendant finally made up his mind that there must be some foreign substance in the plaintiff's body apart from the calcareous material which he had thought might be there from the chromicized catgut used in the stitches failing to be entirely absorbed Then, for the first time, without apparently any further action than the making of his first really careful examination, by the use simply of a probe, which he pressed into a sinus, he found what he thought was calcareous material, which he removed with forceps, and brought out two spears of glass It was quite apparent that these pieces of glass came from the nozzle of a douche which had been broken within the plaintiff's body during the process of administering hot douches to her by the nurses in the hospital There was no other explanation of the presence of the glass in her body, as she herself never made use of a glass nozzled douche Furthermore, when the defendant removed this glass from her body, he gave the two pieces to her and said, "This is outrageous!" and going to a cabinet in his office showed her two douche nozzles, one very thin, the other thicker, and told her that the thin one was a physician's nozzle, which should not have been used except by a physician As the result of the condition which still existed, the plaintiff was obliged to submit to an operation, December 29, when granular particles of glass were removed from her body The prevailing opinion says that the only negligence claimed against the defendant was for his delay in making such an examination of the vaginal cavity as would disclose the foreign substance thereafter found Two experts of standing swore in his behalf that it would have been poor surgery to make such an examination as would disclose the existence of the foreign substance before the time that it was actually made by the defendant, One expert, on behalf of the plaintiff, swore that such an examination ought to have been made three months before it in fact was made It is always easy, after the cause of an injury has been found, to look back and say that that cause should have been sought for The jury failed to give proper force to the fact that the defendant had never had the slightest cause of suspicion that any foreign substance could be causing the trouble The breaking of the glass of a vaginal douche within the vagina is a circumstance so rare as not to have been reasonably contemplated at any time by the defendant, and for failure to anticipate this most unusual occurrence the defendant was most unjustly charged with a substantial money judgment, and, what was worse, with a stain on his professional fidelity

Society Proceedings

COMING MEETINGS

Montana State Medical Association, Miles City, July 12 13
Washington State Medical Association, Seattle, July 12 14

AMERICAN PEDIATRIC SOCIETY

Twenty Eighth Annual Meeting held in Washington, D C, May 8 10, 1916

(Concluded from page 72)

Early Morning Toxic Vomiting in Children

Dr Thomas S Southworth, New York I believe this vomiting to be of toxic origin, because the vomitus after the long night period contains no food residue unless a morning feeding has been given Vomiting from failure of gastric digestion usually occurs later in the day The cases have neither the characteristic histories nor the clinical symptoms and course of recurrent vomiting, which is another toxic type, in which the toxemia is probably of gradual and cumulative evolution Elimination is slow and vomiting prolonged Fever is not constant In the type under consideration, early morning vomiting, fever is a usual accompaniment, and there is an acute putrefactive process in the intestines, with absorption and attempted reelimination by the gastric mucous membrane It is thought that this toxic material, accumulating in the stomach during the hours of sleep, when reflexes are deadened, asserts its presence in vomiting on awakening Purgation results in foul stools, often containing mucus After the stomach has been emptied by one or two acts of emesis, there is no tendency to recurrence The extreme caution in resuming feeding often displayed after attacks of the recurrent type frequently leads to undernutrition in children whose attacks occur at rather short intervals A slightly greater care is demanded in the acute toxic type of intestinal origin

DISCUSSION

Dr DeWitt H Sherman, New York A gastric analysis of the material vomited in the early morning might afford an indication as to whether or not there was hyperchlorhydria, and as to the amount of neurotic element in the case

Dr Isaac A Abt, Chicago I am skeptical as to the gastro-intestinal nature of the vomiting This occurs in a great many conditions outside the gastro-intestinal tract, for instance, nasopharyngitis

Dr Thomas S Southworth, New York I think it probable that some of the children may have had hyperchlorhydria In many of these cases there is unquestionably an odor of acetone to the breath, but I have not made examinations of the urine in these cases If Dr Abt had seen the case I related, he would have had little doubt that the gastro-intestinal condition was the cause The symptoms all subsided when the gastro-intestinal tract was cleaned out The type of cases to which I refer have not had a cough with mucus in the nasopharynx that could have been the cause of the vomiting

Etiology of Chorea

Dr John Lovett Morse, New York There was nothing in the previous history of the patients seen or in the family history to indicate the presence of syphilis, so we decided that this disease plays no part in the production of chorea We found no micro-organisms in the spinal fluid, but in the blood we found some None of these, except the streptococcus, however, would produce lesions in animals This streptococcus produced the lesions of chorea in rabbits The organisms found in the blood were different in the different cases There was a local infection in all the cases in which cocci were found in the blood, so that these organisms might have had no connection with the chorea The absence of organisms in the cerebrospinal fluid would seem to show that the chorea was not due to an organism We think that we are justified in concluding that while there is much that points to an organism or a group of organisms as the cause, the bacterial origin of chorea is not proved The results of the investigation seem to show that if chorea is caused by a micro-organism, the source of infection is ordinarily in the tonsils or the teeth and to confirm the belief that there is an intimate connection between rheumatism and endocarditis and chorea

DISCUSSION

Dr Henry Koplik, New York I have made a number of blood cultures for syphilis in cases of chorea, with negative results We have had a number of cases of endocarditis in which chorea came on secondarily and have had some cases of progressive endocarditis in which we have also found a streptococcus, but that does not mean necessarily that chorea in any of the other cases is of bacterial origin There may, however be a bacterial invasion at first, the bacteria disappearing and leaving behind the toxin that causes the symptoms

Dr I A Abt, Chicago It seems to me that chorea expresses a state of the nervous system that occurs under a variety of circumstances I collected 225 cases from our hospital records, and the largest number of the patients had had chorea for a definite time without any history of a previous infectious disease that could be connected with chorea

Dr B S Veeder, St Louis I think it is simply a syndrome We have never been able to get a change in the colloidal reaction, which indicates that it is not a primarily bacterial condition

Dr John L Morse New York Thirty-seven per cent of these children had rheumatism in the past or with the chorea, with acute endocarditis and with valvular lesions The tonsils were normal in eleven, and had been removed on account of disease in five others The teeth had been removed in seven, and definite pus pockets were found in three when the teeth were extracted

Subcutaneous Injections of Magnesium Sulphate in Chorea

Dr Henry Heiman, New York In five successive cases of chorea, a 25 per cent sterile solution of magnesium sulphate was used Three injections were given daily for from ten to fifteen days The objections to this treatment are the possibility of inflammatory reaction, the fact that very young patients may become unduly excited by the treatment itself, the danger of breaking the needle in the tissues, and albuminuria We found that the injections did not produce sufficient improvement to justify a further trial

Familial Icterus in the New-Born

Dr Isaac A Abt, Chicago There seems to be no connection between this disease and chronic family jaundice, in which the patient may experience but little inconvenience and may attain advanced age, although the condition is present at birth In familial icterus, the children seem to be all right at birth but must be defective, as the liver soon seems to be unable to perform its extra-uterine function I have encountered examples in two families In the first family, of the five children born living, the first two were well and remained so The third died of the disease on the fourth day, the fourth on the third day and the fifth child died on the fourth day In the second family there were six children The first two are living and well The third died of meningitis The fourth child died of icterus on the third day and the fifth on the third day The sixth child was affected and was very ill It, however, began to improve on the fifth day It is now a year old and is well No causes for the disease could be discovered in the history in either family

DISCUSSION

Dr. Wilder Tileston, New Haven Yellow staining of the nuclei of the base of the brain and the medulla is never encountered in jaundice in the adult It indicates a powerful poisoning because these areas are found to be necrotic I agree with Dr Abt that this cannot be a purely septic condition I should like to ask whether fragility of the red cells has been noted in either the mother or the child in connection with this disease In chronic family jaundice this is always present, and there is an excretion of urobilin in the urine, but not in the bile

Some Observations on Measles

Dr Charles Herrman, New York The deaths reported as due to measles give an incorrect idea as to their real number A large number are caused by a complicating bronchopneumonia especially between 1 and 2 years of age This is shown by the parallelism between the curve of morbidity from measles and the curve of mortality from bronchopneumonia between 1 and 2 years In a study of 300 secondary cases of measles in which the time of infection was definitely known, fever appeared on the tenth or eleventh day in 56 per cent , the catarrh on the eleventh or twelfth day in 50 per cent, and the tonsillar spots on the ninth to the thirteenth day The Koplik spots were seen on the eleventh or twelfth day in 54 per cent The catarrh was present in only 7 2 per cent on or before the tenth day, the Koplik spots, in 12 3 per cent, and tonsillar spots in 34 per cent In some patients, the tonsillar spots were present as early as the seventh day They were occasionally noted in patients who did not show Koplik spots Infants under 2 months are absolutely immune This immunity gradually disappears, and is entirely absent at eight months In infants between 5 and 8 months the period of incubation is usually longer, the infection is milder, and they lose less weight The immunity is probably conveyed through the placental circulation Infants between 3 and 5 months who are brought into intimate contact with measles and do not contract the disease are frequently not infected when exposed in later life

DISCUSSION

Dr Henry Koplik New York At the very outset, sometimes five days before the eruption, there is a febrile movement, and with it the first appearance of the Koplik phenomenon We isolate these children, and then wait patiently until the eruption comes out

Meningitis in the New-Born and in Infants Below Three Months of Age

Dr Henry Koplik, New York Many authors assume that meningitis is always secondary to general sepsis in the new-born but in many instances it is a primary infection It is difficult to diagnose, because the signs that we apply later are inadequate to apply to these new-born children We can, however, find some characteristic symptoms First are convulsions, which are usually accompanied by fever, often very high It is only after a week or ten days that there is an increase in the quantity of fluid, which, on lumbar puncture, may show various organisms The disease is not always caused by the meningococcus All the cases seem to be fatal, sooner or later Only one of my twelve patients is alive a child with hydrocephalus The results of washing out the ventricle through the lumbar puncture have not been encouraging How does a new-born baby get meningitis? If you stop to think of some of the methods used in resuscitating infants in some of our hospitals, you can well understand how mouth suction, etc, may afford an avenue of infection with the meningococcus

DISCUSSION

Dr D J Miller Atlantic City N J I had a case of meningococcus meningitis in almost a new-born baby whose first symptom was an attack of conjunctivitis which was erroneously diagnosed as of gonococcal origin The material obtained by lumbar puncture was gelatinous and almost sterile, but later I made a ventricular puncture and found the meningococcus The child died The blood was sterile

Dr Charles Herrman New York The case which I reported last year was unusual, because the child did not even have one convulsion This indicates that cases of meningitis in very early life may not be so rare as the few reports would lead us to believe In some cases the organism causing the disease is the colon bacillus

Dr J H M Knox, Baltimore I reported a case in which a child only a year old, with beginning hydrocephalus was found with slightly turbid cerebrospinal fluid containing the meningococcus There was only a very indefinite history of meningitis in the case

Dr I A Abt, Chicago Is there any difficulty in differentiating between meningitis and meningeal hemorrhage in the new-born, cerebral abscess, or sinus thrombosis? Is there any difficulty in hospitals in making lumbar puncture in the case of new-born babies?

Dr L E La Fetra, New York Meningitis is frequent as a part of general sepsis in infancy, without the symptoms of meningitis If we had necropsies and did lumbar punctures more frequently, I think we should find more cases The meningitis often exists a long time before it is discovered, but we had an interesting case in which pus containing meningococci was known to have developed in the cord within two days

Dr Henry Koplik, New York I know nothing about the minutiæ of bacteriology, but go by the report of the bacteriologist When there is a slight rise of temperature in the new-born, there is considerable difficulty in differentiating between meningitis and ordinary meningeal hemorrhage Otitis is quite common as a secondary infection in new-born babies, but I know nothing about sinus thrombosis in them The difficulty of lumbar puncture is not great

Use of Salt Solution By the Bowel in Infants and Children

Dr Edwin E Graham, Philadelphia My experience leads me to consider this method as of more value than is usually thought I have used it in pylorospasm with gratifying results It has also been of use in erysipelas and typhus fever Feeding children who cannot retain nourishment by mouth in this manner has resulted in their retaining the nutriment enemas, if given slowly Isotonic serum may be given by proctoclysis better than by subcutaneous injection The fluid should trickle into the rectum at the rate of half a pint an hour, at a temperature of from 98 to 100 F The flow should be checked for an hour every second hour, to give the bowel a rest When slight edema of the tissue is noted, the giving of the fluid should be stopped until this disappears The treatment can usually be continued from four to six days, and it may sometimes be kept up, with interruptions, for ten days or two weeks

DISCUSSION

Dr T H McClanahan, Omaha Infants from 2 to 6 days old often suffer from high temperature and anuria, and this is called inanition fever In other cases, such as those of harelip and cleft palate, the baby cannot create suction, and sometimes starves on this account I have seen a case in which breast milk was pumped from the breast of the mother and introduced into the stomach of the child, saving its life

Dr I A Abt, Chicago I have never had a great deal of success in keeping the tube in place Very frequently one sees considerable irritation around it We are simply inverting the natural process by giving the baby water to drink by the rectum, and I should think that it would cause the infant an increased amount of labor that might decide against it in its fight for life

Dr L E La Fetra, New York We found it best to use a vacuum bottle, inverted, for keeping the solution warm It is better to put the water in by some other way than the rectum, if this is possible

Dr Edwin E Graham, Philadelphia There are quite a large number of children in whom it is impossible to introduce fluid by the mouth and stomach My cases were of this sort, and I naturally chose the rectum instead

The Energy Metabolism of a Cretin

Dr Fritz B Talbot, Boston A typical cretin, aged 3 years and 8 months, was studied in the Benedict respiratory chamber of the Massachusetts General Hospital It was found that when he was quiet, he produced, respectively, 39 and 42 calories per kilogram of body weight, which is relatively much lower than the amount of calories produced per kilogram of body weight by two normal babies, aged 8½ and 10 months His metabolism, estimated on the basis of body surface (Lissauer), was also relatively lower This is consistent with the findings of Du Bois in his cretin, aged 36 years

The Dangers From Carriers of Diphtheria to Hospital Efficiency

Drs Samuel S Adams and Frank Leech, Washington, D C One of the dangers that menace hospital efficiency is the diphtheria carrier The efficiency of our hospital has lately been greatly crippled from this cause Our wards were closed to new patients for three weeks, and one ward is still closed The original source of infection was a child admitted for lobar pneumonia A nurse complained of sore throat, but was not off duty She associated with the other nurses and with her patients The baby ward gave the greatest trouble, and eight nurses distributed through the other wards gave cultures, spreading the disease among the patients there Cultures were made after the discovery of the first cases, but before the epidemic could be stopped forty children and one physician, besides the nurses and hospital employees, were affected

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THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Third Annual Meeting, held in Washington, D C, May 11 12, 1916

(Continued from page 70)

Immunity Results Obtained From the Use of Diphtheria Toxin-Antitoxin Mixtures and the Use of the Schick Test

Drs William H Park and Abraham Zingher, New York It is advisable to immunize children soon after the first year of life, so as to afford them a protection against diphtheria at a time when the disease is most dangerous In addition, such young children, by not having any hypersensitiveness to the bacillus protein, show very mild local and constitutional symptoms after the injections An immune child population could thus, be developed with the result that fresh clinical cases would be prevented and the bacillus carrier would probably soon disappear as a hygienic factor in our communities The use of the Schick test in the selection of susceptible children for immunization and in controlling the results of the treatment is justified by the great clinical accuracy which the test has shown during a period of several years in the separation of the susceptible from the immune individuals The test should be carried out properly with a fresh toxin solution, and the results read daily, for a period of from seventy-two to ninety-six hours The pseudoreactions should be controlled with heated toxin, or recognized by their rapid disappearance after seventy-two hours It is only these individuals who give the more marked local reactions after the injections of toxin-antitoxin

Epidemiology of Lobar Pneumonia

Dr A R Dochez, New York Examination of normal individuals showed that the two types of pneumococcus responsible for the majority of the severe cases of lobar pneumonia are not found in the normal healthy mouth, except in such instances as when the individual harboring the organism has been in intimate association with a case of lobar pneumonia When such a condition exists the organism found in the normal mouth invariably corresponds in type to that found in the lung of the diseased individual These studies make it probable that the majority of cases of pneumonia are dependent on either direct or indirect contact with a previous case

DISCUSSION

Dr Edward B Vedder, Washington, D C We learned a long time ago that many normal individuals carried the pneumococcus in their sputum Now, Dr Dochez and his associates tell us that this is wrong In any case prevention is more important than cure It means that every case of pneumonia may be traced to a previous case This means that from a sanitary point of view every case of pneumonia must be treated just like any other infectious disease in which the infecting agent is transmitted by the buccal secretions of those affected, and the present widespread prevalence of pneumonia is probably due to our policy of *laissez faire* Boards of health should demand 1 Notification of all cases of pneumonia 2 Prompt visitation by a health officer, collection of specimens and laboratory diagnosis of the type of organism present in the patient and in the contacts 3 Isolation of the patient and of any contacts who harbor the type of pneumococcus found in the patient 4 A negative culture requirement before the patient or carriers are permitted to mingle with the community

Dr E C L Miller, Richmond, Va Dr Frederick Hanes of Richmond has been doing some work with pneumonia along these lines He has kept mice and diagnostic serums on hand and has treated some patients with the curative serums However valuable this work may be from an experimental standpoint, it is evidently not practical It can be done only by an expert

Dr Joseph Head, Philadelphia Obviously only a small percentage of the germs that are introduced into the mouth find lodgment within the tissues and become pathogenic In making my bacterial examinations for autogenous vaccines, I cauterize the surface of the infected spot with an electric cautery until it turns slightly white, and then extract blood from the tissues through the cauterized spot with a hot platinum spear Out of 400 such examinations I found streptococci in 95 per cent, the influenza bacillus and the *Micrococcus catarrhalis* in about 75 per cent, while the pneumococcus appeared in about 25 per cent

Studies in Typhoid Fever

Dr A L Garbat, New York A positive complement fixation test after prophylactic typhoid immunization is not a regular occurrence, as it is during or after typhoid fever This point may be of aid in deciding for or against the diagnosis of typhoid fever in an inoculated individual still having a positive Widal and ill with a suspicious typhoid and negative blood culture A positive complement fixation test was obtained most often after three injections with a polyvalent vaccine, two injections with the same vaccine or three injections with the single strain vaccine (Rawlings) gave hardly any complement fixation Cultures of the duodenal contents (bile) removed by means of the duodenal tube seem to be a more reliable and simpler method for the detection of typhoid bacilli than stool examinations The serum from convalescent typhoid patients has been employed with distinct benefit in three very severe acute typhoid cases

DISCUSSION

Dr A H Sinclair, Honolulu, H I I do not believe that any patient who gives a positive Widal after typhoid could again contract the disease

Dr Abraham Zingher, New York With intramuscular injections of fresh whole blood, obtained from convalescent scarlet fever patients, either citrated or noncitrated, distinctly beneficial effects were noted in toxic cases after injections of blood obtained from patients who were three or four weeks' convalescent Very striking improvement was seen from 300 c c of fresh blood obtained from a three months' convalescent donor I have used intramuscular injections of normal blood in late septic cases of scarlet fever In these the toxemia of scarlet fever was no more in evidence Injections of normal blood are given in quantities of from 120 to 240 c c, and repeated every four days Such blood is not given for any specific action but for its general stimulating and nutritive value, which helps in tiding the patient over a critical period

Prophylactic and Therapeutic Inoculations in Certain Affections of the Respiratory Tract

Drs George W Ross H K Detweiler, and J C Maynard Toronto In connection with the recent epidemic in Toronto, it was shown that the *Streptococcus pyogenes* largely prevailed in cultures from the nose, nasopharynx and sputum The duties of a battalion of soldiers quartered there were greatly interfered with because of this epidemic cold We prepared vaccines from many strains of different organisms isolated Sixty-two soldiers received from one to six inoculations, and we were strongly impressed by the results obtained

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Obstetrics and Diseases of Women and Children, York, Pa

June LXXIII No 6 pp 997 1192

1 Pregnancy in Tuberculous Report of Sixty Eight Cases C C Norris Philadelphia
2 Operating During Puerperium for Cure of Old Lacerations of Cervix and Perineum A A Hussey, Brooklyn
3 Management of Ovarian Tumors Complicating Pregnancy Labor and Puerperium R M Beach Brooklyn
4 Lipoid Content of Maternal and Fetal Blood A Hymanson and M Kahn New York
5 Postmortem Cesarean Section Report of Ten Cases J A Harrar New York
6 Legal Aspects of Postmortem Cesarean Section G W Whiteside New York
7 End Results in Cases Operated for Salpingitis E MacD Stanton Schenectady
8 Posterior Dislocation of Lower Humeral Epiphysis as Birth Injury E D Truesdell New York
9 Case of Osteomalacia H Bailey New York
10 Palpation of Ureters Per Vaginum A M Judd Brooklyn
11 Case of Congenital Amputation (?) of Fingers T Abbe Washington D C
12 Spinal Anesthesia F H Knight Brooklyn
13 Fibro Adenorhabdomyomatous Mesothelioma of Kidney R A Keilty Philadelphia

Archives of Internal Medicine, Chicago

June Part 1 XVII No 6 pp 711 854

14 *Study of Salt Nitrogen and Water Excretion in Nephritis J P O Hare Boston
15 *Experimental Hypercholesterolemia K Dewey, Chicago
16 *Pharmacologic and Clinical Study of Papaverin D I Macht Baltimore
17 Clinical Hemoglobinometer H Haessler and H S Newcomer Philadelphia
18 *Use of Karell Cure in Treatment of Cardiac Renal and Hepatic Dropsies E H Goodman, Philadelphia
19 *Reaction of Cerebrospinal Fluid S H Hurwitz and C L Tranter San Francisco
20 Method for Determination of Alkali Reserve of Blood Plasma W McK Marriott Baltimore

June Part II No 6 pp 855 1059

21 Clinical Calorimetry Further Measurements of Surface Area of Adults and Children M Sawyer Iowa City Ia R H Stone and E F Du Bois New York
22 Id Formula to Estimate Approximate Surface Area if Height and Weight Be Known D Du Bois Burlington Vt and E F Du Bois New York
23 *Id *Comparison of Metabolism of Men Flat in Bed and Sitting in Steamer Chair* G F Soderstrom, A L Meyer and E F Du Bois New York
24 *Id Metabolism of Boys Twelve and Thirteen Years Old Compared with Metabolism at Other Ages E F Du Bois New York
25 Id Basal Metabolism of Normal Adults With Special Reference to Surface Area F C Gephart and E F Du Bois New York
26 *Id Metabolism in Exophthalmic Goiter E F Du Bois, New York
27 *Id Basal Metabolism in Pernicious Anemia A L Meyer and E F Du Bois New York
28 *Id Basal Metabolism of Patients With Cardiac and Renal Disease F W Peabody Boston, A L Meyer and E F Du Bois New York
29 *Id Metabolism and Treatment in Diabetes F M Allen and E F Du Bois New York

14 Study of Salt, Nitrogen and Water Excretion in Nephritis—Several methods have been proposed for the study of salt and nitrogen excretion in chronic nephritis In one method with the patient on a standard diet, the elimination of an added amount of salt and nitrogen is followed for several days, in another, the salt and nitrogen excretion is quantitated for one day in two-hour urine specimens with the patient on several standard meals of varying composition A third way is to quantitate salt and nitrogen in the blood and urine and express their relations by a formula giving an index of excretion In thirty cases the first two tests have been carried out by O Hare along with other tests of renal function He found that in general salt excretion is impaired before there is much disturbance of water and nitrogen excretion, in most patients salt and water excretion behave very similarly, the nitrogen excretion is greatly impaired usually only in the severe cases Salt water and nitrogen excretion show some disturbance in even the very mild cases in which phenolsulphonephthalein excretion is normal, and there is no increased blood nitrogen These dietary tests can not be used in all cases of chronic nephritis ey cannot be carried out in those that are very severe methods involving the determinations of the indices of cretion of urea and salt do not have a number of the difficulties met with in carrying out the dietary tests These indices were determined in fifteen cases in which both dietary tests were carried out, and the indices seemed to give as much information as the other tests and to possess distinct advantages inasmuch as they can be determined for practically every patient and require considerably less time and less labor in their execution According to the author the great advantage of all three of these tests is that they give information as to disturbed renal function in those mild cases in which phenolsulphonephthalein excretion is normal and the blood urea-nitrogen is not increased

15 **Experimental Hypercholesterolemia**—As a result of hypercholesterolemia Dewey states that gallstones may be formed in sterile bile without infection or injury of the gallbladder Their formation is preceded by desquamation of the epithelial cells, due to the irritating action of an excess of cholesterol Cholesterol injected into the circulation of rabbits is not accumulated in the blood to any large degree, but is rapidly deposited in various organs, while the elimination of it through the bile and urine is also greatly increased The focal infiltration of the kidney with cholesterol which occurs in hypercholesterolemia is accompanied by degenerative processes of the parenchymatous structures The urine, as a rule, contains appreciable amounts of cholesterol

16 **Pharmacologic and Clinical Study of Papaverin**—The alkaloid papaverin Macht found exhibits certain very interesting pharmacologic properties Chief among these are its effect on the heart and blood pressure, its action on the coronary circulation, its stimulating effect on the respiration, its relaxing and tonus-lowering influence on the smooth muscle structures, and its considerable analgesic power These, together with its comparatively low toxicity, suggested its employment for therapeutic purposes The clinical experiences described speak in its favor, and Macht suggests that further observations be made to determine its exact therapeutic value in medicine

18 **Use of "Karell Cure" in Treatment of Dropsies**—The diet which has served Goodman best and which he has employed successfully for some time is that known as the Karell diet or the Karell cure The technic of the Karell cure is simple and easily carried out The patient receives daily at 8 a m, 12 m, 4 p m, and 8 p m 200 c c of raw or boiled milk, warm or cold, according to taste No other food or liquid should be given This strict diet many times meets with violent opposition from the patient, and great complaint is made because of thirst Thirst is particularly tormenting during the first three or four days of the "cure," and often it becomes necessary to allow the patient to rinse out his mouth with water, instructing him to swallow none, however Hunger is not so common a complaint, but when urgent, a small piece of dry toast or zwieback may be given with each portion of milk During the first few days the patient requires continual encouragement to persist with the treatment, but the moral effect of the rapid loss of weight, as shown by daily weighings, together with the very evident decrease of the edema, prove sufficient argument to him, and no further complaint is heard Just how long this very strict diet is to be continued depends on the rapidity with which edema diminishes and on the patient's plea for more food Usually the diet may be increased at the end of a week's time by giving a soft-boiled egg, without salt or pepper, at 10 a m, and a piece of zwieback at 6 p m The next day an egg may be given at 10 a m and at 2 p m, with a piece of white bread, and from now on food is gradually increased until a full diet is being taken During this time the daily quantum of liquid should not exceed 800 c c, and this fluid should be in the form of milk, until the patient receives a full diet, when the milk may be discontinued and cocoa or tea substituted, the amount of liquid remaining the same, however No more than 800 c c of fluid should be taken for from two to four weeks after the disappearance of edema During the "cure," which must be carried out with the patient in bed, the bowels must be kept open, and for this purpose laxatives in pill form are preferable to salines merely because they require no water for their administration In a typical case, that is, in those individuals who begin to lose weight through the loss of edema, and who show increased diuresis, no other medication is required, but in cases in which improvement is not seen at the end of three days, or when symptoms are urgent, such as dyspnea, oppression, restlessness, unduly frequent and weak pulse, or active uremic signs, the drugs and other measures usually indicated in such conditions should be used

19 **Reaction of Cerebrospinal Fluid**—The colorimetric method of determining the hydrogen ion concentration of the cerebrospinal fluid is recommended by Hurwitz and Tranter because it gives constant and reliable results The method, when applied to cerebrospinal fluid, possesses greater accuracy than in the case of other biologic fluids, notably blood The simplicity of the technic makes it applicable as a routine procedure in the examination of spinal fluids As determined colorimetrically, normal cerebrospinal fluid is more alkaline than blood, the difference in the hydrogen ion concentration of the dialysates of the two fluids being equal to 0 45, the value of pH for cerebrospinal fluid being 8 11, value of pH for blood, 7 66 No alteration from the normal reaction has been noted either in the blood or in the fluid of patients suffering from primary or secondary syphilis or from syphilitic affections of the nervous system Thus far no study has been made of the reaction of the cerebrospinal fluid in acute inflammatory conditions of the meninges The demonstration that a change in reaction does or does not occur would have an important bearing on the value of hexamethylenamin as a therapeutic agent in the prophylaxis and treatment of meningeal infections

23 **Comparison of Metabolism of Men Flat in Bed and Sitting in Steamer Chair**—Four normal men and two cardiac patients were studied by the authors in the calorimeter lying flat in bed and in the semireclining position propped up with a back rest, or else in a comfortable steamer chair A total of twenty-one experiments showed that the metabolism averaged 3 per cent lower in the semireclining posture One of the cardiacs, and possibly one of the normal controls, showed a slightly higher metabolism when propped up in bed The difference between the results is so small that in the study of pathologic cases the authors can use the same figures for the average normal metabolism in both postures In the majority of cases, however, the energy requirement is lower in the orthopneic position

24 **Metabolism of Boys of Twelve and Thirteen Compared with Metabolism at Other Ages**—Eight normal boys, 12 or 13 years old, were studied by Du Bois in the respiration calorimeter four to six hours after a small breakfast They were allowed to read for one of the two experimental hours, but were very quiet The methods of direct and indirect calorimetry agreed within 0 04 per cent Their heat production per unit of surface area was 32 per cent higher than the adult level according to Meeh's formula, or 25 per cent higher according to the more accurate "Linear Formula" In studying the effect of growth on metabolism, interpretation of the results obtained on infants is complicated by the fact that babies differ greatly from adults in the proportions of the body and the relative size of the viscera, notably the liver and thyroid Boys just before the onset of puberty have almost adult proportions They are in the midst of a period of accelerated growth The fact that the metabolism is high, points to a specific increase in the metabolism of the growing organism

26 **Metabolism in Exophthalmic Goiter**—The metabolism in exophthalmic goiter has been studied for the first time by Du Bois in a respiration apparatus which is also a calorimeter Thirty-seven observations were made on eleven patients with this disease, and six experiments were made on a cretin With some of the patients the nitrogen balance was also studied The measurement of the heat production

gives the best index of the severity of the disease and of the effect of treatment Very severe cases show an increase of 75 per cent or more above the normal average, severe cases 50 per cent or more, and moderately severe and mild cases less than 50 per cent, while a few mild and several atypical or cases in which operation has been performed may be within normal limits In severe cases the warmth of skin and sweating can be accounted for entirely by the necessity for the increased elimination of heat At least a part of the tachycardia is due to the increased metabolism, and perhaps it might be possible to reproduce the extreme tachycardia, the cardiac enlargement, emaciation and mental irritability if it were possible to stimulate the metabolism of normal men for twenty-four hours a day over a period of months or years The specific dynamic action of protein and of glucose is within normal limits, and there is no consistent difference between the effects of protein in meat and an equal amount in milk and eggs One patient was able to derive 89 per cent of his calories from carbohydrate in an experiment when he was showing an alimentary glycosuria The average water elimination through skin and lungs in the severe and moderately severe cases of hyperthyroidism is 39 9 gm per hour The increase above the normal is closely proportional to the increase in heat production, 25 7 per cent of the calories are dissipated through vaporization in goiter patients whereas the mean normal is almost the same, 23 9 per cent The level of the heat production was used as an index of the effect of medical treatment Rest in bed for a week or more caused a drop of more than 10 per cent The effects of treatment with Beebe's serum, thyroid 'residue,' ergotin and quinin hydrobromate was less marked, each being tested on one patient Ligation of the thyroid arteries with three out of the four patients studied caused a distinct rise in metabolism the duration of which was uncertain There is as yet no proof that any conservative form of treatment causes a greater reduction of metabolism than mental and physical rest

27 **Basal Metabolism in Pernicious Anemia**—Three mild cases of pernicious anemia showed very slight increase in the metabolism In two severe cases the demand for oxygen was from 7 to 33 per cent above the normal average The basal metabolism of pernicious anemia is lower than that of leukemia but, as a rule higher than that of secondary anemia The agreement between the direct and indirect calorimetry as well as the respiratory quotients indicates that the basal metabolism of pernicious anemia is qualitatively identical with the normal Although the demand for oxygen may be increased, the compensatory processes in uncomplicated cases of pernicious anemia are capable of meeting the demand in spite of a greatly diminished hemoglobin content There is some ground for the belief that the height of metabolism is a measure of the severity of the clinical pictures

28 **Basal Metabolism of Patients with Cardiac and Renal Disease**—Sixteen patients with cardiac and cardiorenal disease were studied by the author The respiratory quotient in all cases was within normal limits (0 73 or above) Patients with compensated cardiac lesions or with mild nephritis showed no increase in the metabolism Of twelve patients with dyspnea nine showed a distinct rise in metabolism, and in five of these the increase was from 25 to 50 per cent above the average normal Two out of the five gave evidence of marked acidosis in the low content of carbon dioxid in the alveolar air In two others whose metabolism was just as high there was no significant depression of the alveolar carbon dioxid

29 **Metabolism and Treatment in Diabetes**—Three patients with severe diabetes and three with moderate or mild diabetes were studied by Allen and Du Bois in the respiration calorimeter The effects of the oatmeal treatment and the fasting treatment were followed in detail No special influence of oatmeal in diabetes or special readiness of oxidation of this form of carbohydrate was demonstrable in these experiments The occurrence of 'total' diabetes in human patients with dextrose-nitrogen ratios approximating 3 65 to 1 and corresponding respiratory quotients is shown Notwithstanding the extreme severity, neither the sugar excretion nor the gaseous exchange gives ground for assuming the formation of sugar from fat in any instance Even in the severest type of diabetes the active symptoms may be eliminated completely by prolonged fasting The observations in the respiration calorimeter prove that patients as a result of the fasting acquire the power of oxidizing sugar derived first from their own body protein and later from the protein and carbohydrate of a carefully regulated diet The respiratory quotients during fasting and after the glycosuria had ceased were in some such instances higher than can easily be explained by the oxidation of the materials supposedly available Also the ingestion of alcohol was sometimes followed by respiratory quotients higher than would theoretically be expected The specific dynamic action of food, especially fat was apparently normal in a patient with moderately severe diabetes The results of two respiration experiments in a severely diabetic patient have shown that mild exercise slightly raises the quotient, and this suggests the possibility that exercise may improve carbohydrate utilization Generalizations or positive conclusions from these experiments are not attempted

Boston Medical and Surgical Journal

June 22 CLXXIV No 25 pp 891 924

30 Movements in Medicine D L Edsall Boston
31 Respiratory Exchange Respiration Apparatus for Clinical Use (To be concluded) F G Benedict and E H Tompkins Boston
32 Cholecystostomy vs Cholecystectomy F B Lund, Boston
33 Case of Sacro Iliac Strain Following Symphysiotomy C F Painter Boston

Bulletin of Johns Hopkins Hospital, Baltimore

June XXVII No 304 pp 157 192

34 *Thorium for Pyelography J E Burns Baltimore
35 *Statistical Study of Six Hundred and Thirty Five Labors With Occiput Posterior E D Plass Baltimore
36 Letter of Edward Jenner Containing Brief Account of His Discovery of Vaccination C M McBryde Washington D C
37 Sixty Four Cases of Epilepsy in Patients From Fourteen Years to Forty Years of Age L R Waters Baltimore
38 Severe Anemia With Eosinophilia A F Beifeld and M E Barnes Chicago
39 Possible Role of Books in Dissemination of Contagious Diseases C A Laubach Baltimore

34 **Thorium for Pyelography**—Burns is emphatically of the opinion that thorium solution fulfils all the conditions necessary for an ideal pyelographic medium Clinically, there has never been the slightest evidence of toxicity in a series of 125 cases the amounts used in a single case varying from a few cubic centimeters to almost a liter This alone Burns says, is proof of its nontoxicity Experimentally, although in a few instances death has followed the injection of large doses into the peritoneal cavity and tissues of animals larger doses intraperitoneally and intravenously have produced no ill effects That the solution is nonirritating is shown by the absence of urinary symptoms after its use and the absolute lack of any such evidence cystoscopically and at operation The pyelograms and cystograms made with this solution show a splendid shadow which possesses an unusual clearness of delineation The solution is clear and watery, therefore it possesses a great degree of fluidity permitting its ready elimination from the urinary tract It is perfectly clean and does not stain the linen In this particular it possesses another marked advantage over other solutions, particularly those of the silver salts It is quite inexpensive, being about one third as costly as collargol

35 **Occiput Posterior in Labor**—Plass analyzed 5 770 cases representing 5 801 children There were 635 cases of occiput posterior among 5 488 vertex presentations an incidence of 11 57 per cent (right 7 96 per cent, left 3.3 per cent) These figures are considerably lower than those usually given The discrepancy is explained by the fact that the majority of the patients applied for admission only when labor was well advanced and after a certain amount of internal rotation had taken place Rotation of the occiput into the hollow of the sacrum occurred in 14 per cent, of the cases Premature rupture of the membranes was not especially frequent when the occiput was posterior Spon-

176 Public Health Situation as Portrayed by Mortality Records H H Shoulders, Nashville
177 *Simplified Technic in Application of Schick's Reaction for Testing Immunity to Diphtheria W Litterer, Nashville

174 and 177 Abstracted in The Journal, April 22, pp 1347 and 1349

Texas State Journal of Medicine, Fort Worth

June, XII, No 2 pp 55 120

178 Mental Health G H Moody, San Antonio

West Virginia Medical Journal, Huntington

June, X, No 12, pp 339 434

179 Some Medical Problems and Remedy A P Butt, Davis
180 Accessory Sinusitis E D Wells, Hinton
181 Report of Medical Inspection in West Virginia State Schools H B Jones, Glendale

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

Archives of Radiology and Electrotherapy, London

June, XXI, No 1, pp 1 40

1 Roentgenography in Diagnosis of Diseases of Accessory Nasal Sinuses H M Berry
2 Movements of Foreign Bodies in Brain G Vilvandre and J D Morgan

British Journal of Children's Diseases, London

June, XIII, No 150, pp 161 192

3 Fainting Attacks in Children R Hutchison
4 Case of Epidemic Catarrhal Jaundice, Meningism, Death J A Procter and G Ward
5 *Two Cases of Intestinal Obstruction in Children T J Wood

5 **Intestinal Obstruction in Children**—One of the cases cited by Wood was a tuberculous tumor of the mesentery and intestine, the other was a case of cyst of the mesentery causing volvulus

British Medical Journal, London

June 3, I, No 2892, pp 777 808

6 Influence of Antiseptics on Activities of Leukocytes and on Healing of Wounds C J Bond
7 Soldier's Foot and Treatment of Common Deformities of Foot R Jones
8 *Louse Problem at Western Front A D Peacock
9 Pediculus Humanus (Vestimenti) and Pediculus Capitis A Bacot
10 *Best Methods of Destroying Lice and Other Body Vermin T P Kinloch
11 Treatment of Infected Wounds by Physiologic Methods A E Wright

8 **Method of Killing Lice**—The best killing agent for lice, Peacock says, is a mixture consisting of naphthalene 96 per cent, creosote 2 per cent, and iodoform 2 per cent

10 **Destruction of Lice and Other Body Vermin**—According to Kinloch the efficiency of naphthalene, creosote and iodoform mixture would not suffer in any material degree if magnesium silicate were substituted for iodoform, and because of the high price of iodoform such a substitution is of great advantage In a series of experiments powders were prepared, with magnesium silicate as a basis, and containing various actively insecticidal liquids, such as trichlorethylene and creosote, and were compared with powders containing similar liquids, but with naphthalene as the basis In every case the greater efficiency of naphthalene as a basis for the powders was substantiated Experiments were also made for the purpose of ascertaining whether the creosote could be advantageously replaced by another insecticide These experiments showed that when all conditions are taken into account, creosote is the most valuable of the actively insecticidal liquids for admixture with naphthalene in an insecticidal powder

Glasgow Medical Journal

June LXXXV, No 6, pp 377 456

12 Etiology and Treatment of Gastric Ulcer (To be continued) H Morton
13 *Rupture of Pregnant Diverticulum of Uterus A N McLellan
14 Eight Hundred Cases of Anesthesia With Vernon Harcourt Chloroform Inhaler H P Fairlie

13 **Rupture of Pregnant Diverticulum of Uterus**—In the case cited by McLellan the pregnant sac was perfectly smooth and uniform on its surface, except at one point, where it was united by a thick, fleshy pedicle to the lower part of the body of the uterus in front It had no attachment to tube or ovary and an apparently normal uterus, with normal adnexa, lay behind it McLellan, therefore, came to the conclusion that he was dealing with a pregnancy in a diverticulum of the uterus The patient, 23 years of age was admitted to the infirmary in a state of collapse For over five months before the date of admission her menstrual periods had been in abeyance, and she believed herself to be pregnant For fourteen days before admission she had felt occasional sharp pains in the left iliac region On the evening of the day of admission she was seized with a sudden severe pain in the left side, as if she had received a blow, this was followed by collapse No detailed examination was made on account of the patient's precarious condition, but the outlines of a fetus could easily be made out lying immediately beneath the anterior abdominal wall An hour later the abdomen was opened by a subumbilical median incision Its cavity was full of blood, partly fluid, partly clotted, and a fetus of about six months could be felt lying free in it The cord was ligatured and the fetus removed After the blood had been mopped up the cord was traced to the placenta, which projected to the extent of half its volume from a muscular sac Posteriorly, and near its lower border, the sac was attached by a fleshy pedicle, about the thickness of the thumb to the front of the uterus a little above the level of the bladder The pedicle was tied and the sac was removed A slightly enlarged and softened uterus with normally situated tubes and ovaries was then revealed There was no indication of a duplex or bicornuate condition of the uterus The patient made an easy recovery

Journal of Laryngology, Rhinology and Otology, London

June XXXI, No 6, pp 225 272

15 Dacryocystorhinostomy, Its Indications and After Treatment B Horgan
16 Atrophic Rhinitis (Ozena) and Tuberculosis J Macleith
17 Reports for Year 1915 From Ear and Throat Department of Royal Infirmary, Edinburgh A L Turner

Journal of Tropical Medicine and Hygiene, London

June 1 XIX No 11 pp 129 140

18 Experiments on Polyneuritis in Pigeons A Breinl
19 Ankylostomiasis, Diagnosis and Treatment R D Keith

Lancet, London

June 3 I, No 4840 pp 1111 1156

20 Typhus in Serbia (To be continued) R O Moon
21 Case of Acute Diabetes W G Smith
22 *Treatment of Septic Wounds, With Special Reference to Use of Salicylic Acid L G Anderson, H Chambers and M Lacey
23 Ill Treatment of Genital Prolapse W E Fothergill
24 Factor in Treatment of Head Injuries and Allied Conditions T E Harwood
25 Spinal Anesthesia S B Gadgil
26 *Function of Medullary Nerve Sheath C E H Milner
27 Rupture of Bladder Due to Retroverted Gravid Uterus J E G Calverley
28 Anesthetization of Two Cases of Patent Ductus Arteriosus H R Phillips
29 Cockroach, Its Destruction and Dispersal J J H Hoit

June 10 No 4841 pp 1157 1202

30 Typhus in Serbia R O Moon
31 Cases of Intestinal Disorders Arising From Protozoal Infection B R G Russell
32 Cases of Lamblia Intestinalis Infections From Gallipoli A M Kennedy and D D Rosewarne
33 Nature and Distribution of Parasites Observed in Stools of One Thousand Three Hundred and Five Dysenteric Patients H B Fantham
34 Cysts of Giardia (Lamblia) Intestinalis in Human Dysenteric Feces A Porter
35 Spinal Anesthesia H M Page
36 Treatment of Anaphylaxis A S Leyton and H G Leyton
37 Prevention of Fly Breeding in Horse Manure S M Copeman

22 **Septic Wounds Treated With Salicylic Acid**—The conclusions drawn by the authors from their observation of [illegible],000 cases are 1 The bactericidal action of many of the so-called antiseptics when applied to septic wounds is negligible 2 The majority of wounds heal without the applica-

tion of an antiseptic provided free drainage is supplied and dressings are changed frequently Hypertonic saline, in so far as it aids physiologic processes, is preferable to many so-called antiseptics 3 A strong antiseptic can sterilize the surface of a wound with which it comes in contact, and if applied continuously, gives excellent results 4 Salicylic acid applied in a suitable form can often save cases when other methods have failed It is particularly useful when dressings cannot be repeated at frequent intervals The method has been to keep a saturated solution of salicylic acid in alcohol and to add a little of this to the last funnelful of saline solution with which the wound is irrigated in a proportion of 2 to 3 drams to a pint If applied in this way suspended in saline solution the crystals can be deposited over the surface and reach every part of the wound They pass into solution slowly and exert a continuous bactericidal action This method has the advantage that drainage tubes can be used and free exit for discharge maintained Dusting the wound with the dry powder has the disadvantage that the crystals float and do not reach deep crevices If the crystalline deposit reaches all parts of the wound in cases in which exudation is being discharged an immediate diminution occurs in the number of living bacteria on the surface of the wound A thick paste of salicylic acid in sterile saline (1 gm acid 9 c c saline) has been used for the cut surfaces of long bones in septic amputations In some cases the stumps have healed by first intention In others slight sepsis occurred in the muscular flaps In every case no infection of the bone marrow occurred

26 **Function of Medullary Nerve Sheath**—Apart from its action as a protective buffer against injury to the nerve fibers there has always existed some doubt as to the function of the medullary nerve sheath, and physiologists have from time to time held different views The fact that in two cases of nerve trauma there was in one a loss of voluntary physiologic excitability in a muscle without loss of faradic reaction and in the other a return of voluntary physiologic excitability without return of faradic reaction, leads Milner to believe that the medullary sheath acts as a conductor for the electric current, while its existence is unnecessary for the transmission of physiologic impulses which are dependent solely on the continuity of the axis cylinders In a case quoted of division of the spinal accessory nerve it was noted that the physiologic impulse failed from the outset to reach its destination, whereas the electric impulse persisted until the eighth day

Medical Journal of Australia, Sydney

May 13 I No 20 pp 393 410

38 Temperament R T Michell
39 Cyst of Pancreas Resection of Body and Tail Recovery E Meyer

Bulletin de l'Académie de Médecine, Paris

May 23 LXXV No 21 pp 607 646

40 *Inherited Syphilis Predisposes to Intestinal Diseases (L'intestin des heredo syphilitiques) Gaucher
41 *Association of Colors With Certain Figures and Words (De l'encephalopsie chromatique) R Blanchard
42 *Transplantation of Cartilage in Surgical Repair H Morestin
43 Cerebrospinal Meningitis Fifty Six Cases Rubinrot

40 **Inherited Syphilis as Predisposing to Intestinal Disease**—Gaucher's thirty years of experience have convinced him that the enterocolitis of young infants is particularly frequent on a basis of inherited syphilis No one thinks of syphilis as being responsible for the persisting bowel trouble in the young infant, the food is incriminated and one change made after the other all to no avail He says that these are the children that develop appendicitis later and that Segond told him a few weeks before his death, that he had found signs of syphilis in all his operative cases of appendicitis, confirming Gaucher's statement in 1904 in regard to the syphilitic origin of appendicitis In any event he declares treatment for the syphilis should be commenced at once to supplement the usual measures

41 **Association of Colors with Figures and Words**—Blanchard devotes twenty-five pages to a comprehensive study of what he calls "chromatic encephalopsia," with bibliography His attention was attracted to the subject by two cases personally observed The two young women had the internal perception of certain colors, one when she heard, read or thought of certain figures, the phenomenon occurred with the days of the week in the other case In both it dated from childhood, but it finally gradually subsided in the first case but persists unmodified in the other He compares with these the various cases of psycho-chromesthesia on record, and emphasizes that the phenomena are all in the psychologic sphere They are exceptional, but not abnormal in the pathologic sense of the word

42 **Cartilage Flaps for Surgical Repair**—Morestin expatiates on the various advantages of a cartilage transplant for repairing a breach in the skull, repairing the orbit lower jaw and other joints where a stiff and durable substance is required He has found the costal cartilages best adapted for the purpose, especially the sixth, seventh and eighth costal cartilages from the same or another person He fills the breach with scraps of cartilage or the cartilage entire, sometimes leaving arms to project beyond No suturing is required, the suturing of the soft parts above holds all in place The perichondrium surface is turned inward as this side is apt to curve The fragments blend and grow together and grow solidly to the adjoining tissues By the end of a few days the gap is thus filled with a solid mass, and the skull or other bone seems regular and solid Morestin thinks that the cartilage persists as such, as he has seen no evidence of ossification His experience in the repair of war wounds has confirmed his assertions during the last two years that cartilage is the easiest of all tissues to transplant and the best of all for purposes of repair where a light skeleton is sufficient

Paris Médical

May 27 VI No 22 pp 489 504

44 *Vaccination Against Typhoid in the Japanese Army M Yagisawa
45 Devices for Working Appliances After Amputation of the Hand (Mains de travail pour les amputes) Boureau
46 Trophic Disturbances in the Fingers Consecutive to Superficial Shell Wounds A Mouchet and P Delpech
47 *Acute Meningitis During Course of Acute Articular Rheumatism Cerebral Rheumatism (Contribution a l'etude du rhumatisme cerebral) J Colombe

June 3 No 23 pp 505 548

48 Modifications of the Psychomotor and Emotional Reactions After Trephining (Les reactions psychomotrices et emotives des trepanes) J Camus and Nepper
49 *Alcohol Blocking of Nerve to Arrest Muscular Contracture (L'alcoolisation tronculaire au cours des acromyotonies rebelles du membre superieur) J A Sicard
50 Cortical Anesthesia After Injury of the Skull (Les anesthesies corticales a topographie atypique dans les traumatismes craniens) M Villaret and M F Beaulieu
51 Disturbance in Equilibration After Concussion of the Brain (Les troubles de l'equilibre dans les commotions craniennes) Cestan P Descomps and R Sauvage
52 Traumatic Hysteria Persisting for Fifteen Years (Cas d'hystero traumatisme revu 15 ans apres les accidents initiaux) P Chavigny and L Spillmann
53 Hemianopsia of Cortical Origin F Terrien and Vinsonneau
54 Case of Almost Pure Organic Hemi Anesthesia (A propos de l'hysterie sur un cas d'hemianesthesie organique presque pure) A Leri
55 Cicatricial Localized Paresthesias (Topoparesthesies cicatricielles Examen des troncs nerveux et des cicatrices dans les blessures des nerfs) A Thomas
56 *Aphasia With Left Hemiplegia From Ligation of Right Common Carotid J Ferrand
57 Latent Wounds of Vessels and Their Nerves (Les blessures latentes des paquets vasculo nerveux dans une formation de l'avant.) M Stassen and J Voncken
58 Electric Tests of Conducting Power of Nerve Under Compression (Des reactions electriques du nerf dans la compression nerveuse) G Battez and R Desplats

44 **Vaccination Against Typhoid in the Japanese Army**—Yagisawa gives tabulated statistics which demonstrate anew the advantages of vaccination against typhoid It not only reduced the morbidity but had a marked attenuating influence on the disease when it occurred During the period between the war with China and the war with Russia (1897 to 1903), the morbidity averaged 5 per thousand of the average force of 125,629 troops, with a mortality of 1 per thousand Then

the morbidity increased to 8 and the mortality to 1 3 per thousand Antityphoid vaccination was then introduced, in 1908, and the morbidity dropped to 0 7 and the mortality to 0 08 per thousand among those vaccinated more than once while the figures remained at the same height among the nonvaccinated and the civilian population Other tables compare the course of the disease in the 412 vaccinated who developed it and in the 2,533 nonvaccinated, showing the comparative mildness in the former One table lists the interval between the vaccinations and the onset of the disease In 69 the interval approached or surpassed one year Intestinal hemorrhage occurred in only 6 per cent of the 266 vaccinated typhoid patients and in 16 4 per cent of the 122 nonvaccinated Those vaccinated only once are listed with the nonvaccinated

47 **Acute Meningitis in Acute Articular Rheumatism**—In the case reported, tuberculosis and syphilis could probably be excluded and drugs had not been given in amounts sufficient to explain the meningeal irritation Hence Colombe is inclined to accept it as a case of the rheumatism virus acting on the meninges as well as on the joints The joint symptoms became attenuated as the meningitis developed The lumbar puncture fluid was apparently sterile, with polynuclears and lymphocytes in abnormal numbers and with abnormal outlines

49 **Alcohol Blocking of Trunk Nerve for Paradoxic Contracture after War Wounds** — This number of the *Paris Medical* is devoted entirely to the neurologic aspect of gunshot and shell wounds Sicard's further experience has confirmed the instructive findings when a tourniquet is applied high up on the arm As the circulation is arrested, the contracture yields while contraction from retraction of tissues persists unmodified As soon as the Esmarch band is removed the contracture returns as before This reflex contracture is primarily an effort of defense against pain but it soon assumes a permanent character, absolutely rebellious to all ordinary measures and rendering the hand totally useless as a rule In old rebellious cases of this kind Sicard has succeeded in restoring normal conditions by injecting alcohol directly into the trunk nerve, which is exposed for the purpose He injected usually under local anesthesia 1 c c of a 20 per cent solution of alcohol (*alcool a 20°*) This blocks the nerve enough for the purpose, while permitting complete recuperation later Almost immediately the contracture relaxes and the pain subsides The fingers are straightened, cotton pads placed between them and the hand wrapped in cotton and a plaster dressing The plaster is removed in from one to three weeks and the fingers gently exercised and kept in a good position Eleven of the twenty-three patients given this treatment immeasurably improved in the course of two or three months But the after-treatment, to maintain what has been gained, must be systematic and persevering Better results were obtained with flexion contracture than with contractures in extension

56 **Aphasia and Hemiplegia after Ligation of Common Carotid**—Six days after a bullet had entered the neck on the right side it was found protruding from the common carotid which it had severed for three fourths of its diameter The impacted bullet was all that had prevented fatal hemorrhage It was necessary to ligate the artery above and below the injury, and the wound soon healed The man was unconscious for two days When he roused his left side was paralyzed and there was total aphasia Although he had been a skilled accountant, all knowledge of figures had vanished The aphasia was more of the type of an intellectual deficit than of disturbance in speech The derangement in the circulation in the right hemisphere was probably responsible for it Ferrand calls attention to this case as further testimony to the assumption that the mental faculties are not connected with certain narrow localizations

Presse Médicale, Paris

June 1, XXIV, No 31, pp 241 248

59 *Treatment of Painful Neuritis From War Wounds by Direct Injection of Alcohol Into the Nerve (Traitement des causalgies par l'alcoolisation nerveuse locale) J A Sicard

60 *Tenon and Mortise Joint to Restore Shape and Strength to Bone After Limited Resection (Sur un procede de coaptation osseuse par tenon et mortaise supprimant le greffon et la suture metallique) J Calve

June 5, No 32, pp 249 256

61 Possible Complications of Gonorrhea and Soft Chancre (A propos de la prophylaxie des maladies veneriennes autres que la syphilis) A Renault

62 *Coma in Diabetic Drunkard (Le coma ethylo diabetique) E Schulmann

59 **Alcohol Blocking of Nerve in Treatment of Causalgia from War Wounds**—Sicard reports that in twenty-one cases painful neuritis rebellious to all other measures has been successfully combated by injection of alcohol directly into the nerve trunk Others have had similar experiences so that he now knows of forty-three cases of relief by this means of the persisting paroxysms of pain All the nerve trunks tributary to the pain must be blocked The alcohol must be 60 or 80 per cent (*alcool a 60 degres*), weaker than this it fails of its purpose The fear of motor disturbance is negligible in comparison to the agonizing suffering from the causalgia, especially as the nerve recuperates from the alcohol in eight or ten months so that any damage from it is only temporary He has repeatedly found that the electric reaction of degeneration, complete at first after the injection of alcohol at 70 degrees into the nerve, had subsided entirely by the end of the fourth to the eighth month, the electric response then being quite normal Some of the results obtained in these painful neuritis cases were bafflingly favorable In some cases partial paralysis retrogressed as the pain disappeared after the nerve blocking One soldier with intensely painful median paralysis from a wound on the inner aspect of the arm had had two operations to expose the nerve but without benefit After six months of suffering the injection of alcohol not only banished the pain but restored the complete use of the hand, some ability to bend the fingers returning by the next day Results like these can be explained only by assuming that the sensory fibers are more sensitive than the motor fibers to the action of alcohol, or else that the intense pain had inhibited the motor function, and it returned as the neuralgia subsided There has been but one failure in the forty-three cases that he has compiled In this case the alcohol had been injected at the site of the lesion, instead of above it, the customary technic The interval since the nerve blocking has been over a year in a number, and the cure has been complete to date Motor functioning has been regained in nearly every case when the wound was not so extensive as to debar this permanently

60 **Mortise Joint after Resection of Long Bone**—Calve gives an illustration of a method of cutting the stumps so they will dovetail into each other, a regular tenon and mortise joint This coaptates the stumps so that they hold firm and strong, restoring the shaft complete except for the resected portion The method is applicable only when a short segment was resected, but the special interlocking as illustrated prevents any displacement in any direction, without the use of any foreign body

62 **Diabetic Coma in Delirium Tremens**—These two conditions seemed to be superposed in the two cases reported Both the diabetic coma and the delirium tremens retained their characteristics, but the combination proved fatal in each case

Revue Médicale de la Suisse Romande, Geneva

May, XXXVI, No 5, pp 273 344

63 Modern Treatment of Malignant Tumors Berdez

64 Valves of the Navicular Fossa in the Urethra (Note sur les valvules de la fosse naviculaire du canal de l'uretre chez l'homme) N Loewenthal

65 Research on Alkaloid From the Bark of the Pomegranate (Etude pharmacodynamique sur la pelletierine) Loup

Correspondenz-Blatt fur Schweizer Aerzte, Basel

May 27, XLVI, No 22 pp 673 704

66 *A Year of Military Surgery (Quelques remarques sur la chirurgie de guerre) Julliard

67 Atropin Poisoning Two Cases Belladonna Root Sold by Wholesale House in Place of Inula Root (Eine Vergiftung mit Radix Belladonnae) H Hunziker

66 **A Year of Military Surgery** —Julliard reviews his experiences as chief of a Red Cross hospital at Lyons They

confirm the assumption that persisting suppuration invariably indicates the presence of some foreign body or sequester Any operation on such a patient is followed by high fever, but it is generally transient The operation, however, is liable to rouse some latent infection He had one case of tetanus, fatal in eight days, which developed during the afebrile healing of a wound of the ilium The projectile had been extracted one month after the injury, and the tetanus made its clinical appearance a month later It had been preceded by a recrudescence of the suppuration without appreciable cause This tardy tetanus from liberation of latent spores by some operative intervention has been reported by a number of surgeons He says that in his efforts to keep from amputating he went to the opposite extreme and not only lost precious time but obtained poorer functional results than when he amputated in other cases Another point he learned, which is important in managing industrial accidents, is that the flaps left after an amputation must never be sutured, as this is liable to hold back secretions and entail severe infectious phenomena He noted also that men wounded in the head seldom recovered when diffuse brain symptoms became manifest But those with localized symptoms usually recovered when the wound was treated promptly Wounds of the skull, he reiterates should be examined and operative measures applied without delay and the men should be kept on the spot until out of danger —no attempt should be made to transfer those wounded in the skull

Policlinico, Rome

May 21 XXIII No 21 pp 645 676

68 Stereoscopic Roentgenography (Note di radiostereoscopia) P Alessandrini

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

May 20 I No 21 pp 1775 1864

69 *The So Called Congenital Megacolon (Ziekte van Hirschsprung) R de J de Jong

70 *Chronic Articular Rheumatism (Het chronisch rheumatisch gewrichtslijden in Nederland) J van Breemen Concluded in No 22

May 27 No 22 pp 1925 2012

71 Experimental Research on Vaccinal Allergy II R P Van de Kasteele

72 Treatment of Tuberculous Peritonitis (De heelkundige behandeling der tuberculeuse buikvliesontsteking) P H Van Roojen

73 Permanent Paralysis of the Superior Oblique Muscle After Killian s Operation for Frontal Sinusitis (Een geval van blijvende verlamming van den M Obliquus superior na een operatie volgens Killian) G Ten Doesschate and A De Kleyn

69 **Hirschsprung's Disease**—De Jong has found a valve formation in the bowel responsible for certain cases of megacolon The colon was not abnormally large to start with, but the obstruction from the valve soon entailed the clinical picture of Hirschsprung's disease He found that no fluid passed into the rectum when injected into the colon of the cadaver of one 3 months-old child who had succumbed to inability to void feces The colon was injected with formaldehyd in situ, and this showed up plainly the two or three folds in the mucosa acting like a valve to close the outlet Neither the colon, the flexure nor the mesentery seemed to be naturally excessively large The valve-like folds were responsible for the stoppage of the feces He insists that the findings in this and other similar cases demonstrate that the term megacolon congenitum is a misnomer In a recent case of similar disturbances the first signs of trouble pain and constipation developed at the age of 44, finally presenting the picture of complete ileus The giant sigmoid flexure was resected and there has been no further trouble since There was nothing like a valve formation in this case, but the flexure and its mesentery probably had been naturally abnormally large and a long period of constipation resulted in the filling and stretching of the flexure Probably many cases of this kind have been classed as true Hirschsprung s disease, and yet in reality they have nothing in common with it except the large sigmoid flexure

70 **Chronic Rheumatic Joint Affections in the Netherlands**—Van Breemen discusses in turn what he calls the seven types of chronic rheumatic joint disease deforming arthritis, fibrous rheumatism, deforming arthritis of a single large joint, chronic arthritis of the vertebrae, pseudorheumatism, and subchronic and chronic articular rheumatism, the latter including also the joint troubles of the arthritic diathesis and of "rheumatoid tuberculosis" This classification is a guide to treatment He has never known of a case of deforming arthritis, including that of the vertebrae, in which a cure was realized But even although the joint may be badly deformed, systematic courses of physical measures may ward off crippling The main reliance in deforming arthritis is on massage, rubbing and kneading, to get rid of the infiltrations which interfere with the use of the joint General measures steam and dry heat do little good, and the massage has to be done by an expert

Exercise is an important factor in treatment of chronic rheumatism but the ordinary use of the joint is too strenuous exercise as a rule

It is important to realize that with a tendency to rheumatism the limit of tolerance for exercise and for rest is abnormally low The use of the joint must be restricted Under "pseudorheuma" he reviews the joint troubles associated with exophthalmic goiter, heart disease, gonorrhea, etc With gonorrheal arthritis Bier's hyperemia treatment should be given a trial Every year he encounters cases of syphilitic joint troubles long treated for supposed rheumatism, the involvement of the periosteum and the location of the trouble should aid in differentiating Tuberculous joint troubles in the aged are often mistaken for true rheumatism

With a chronic rheumatic affection of the hip joint or other large joint in the aged much benefit can be derived from cautious exercise Diathermia is almost the only means to apply heat to the hip joint and it often proves useful Fibrous rheumatism is secondary, and potassium iodid may help During the progressing stage no attitude should be allowed that will compromise functioning later The subchronic stage into which acute articular rheumatism may pass is often improved by steam baths and electric light baths, with massage, watching over the heart

The arthritis of rheumatism never suppurates The irritation starting it may be of bacterial, toxic or autotoxic origin

The joint troubles with the arthritic diathesis are milder than most others, and they are liable to alternate in the course of years with neuralgia and muscular rheumatism and to change about So far as the diet is concerned, these patients should be treated as for gout This is the only form of chronic rheumatic arthritis in which dietetic measures have displayed any efficacy in his experience

Hospitalstidende, Copenhagen

May 24 LIX No 21 pp 489 516

74 *Pregnancy Polyneuritis Four Cases V Albeck

75 *Support for Patients With Heart Disease So They Can Sleep Comfortably Sitting Up (Et Hjærtebord) K Schroeder

74 **Pregnancy Polyneuritis**—Albeck describes four typical cases of this affection all with brain symptoms accompanied by more or less loss of memory The paresis, neuralgia and anesthesia were restricted to the legs in two cases, in the others the arms were involved, and one patient had in addition optic neuritis The polyneuritis terminated fatally in three cases on record but Albeck s four patients recovered The onset with uncontrollable vomiting, the tendency to delirium, the complete loss of memory for a few weeks or months, the scanty diuresis—all indicated toxic action as responsible for the polyneuritis In one of his cases the polyneuritis symptoms and amnesia persisted from the third month nearly to the end of the pregnancy, and two years later the woman was under treatment for encephalitis Two of the women were primiparae In one woman of 32 the tendency to delirium and the amnesia persisted after delivery at term and contractures developed requiring tenotomy The clinical picture of pregnancy polyneuritis is so grave and is liable to entail such serious disturbance that Albeck in his latest case interrupted the pregnancy and benefit was apparent at once The pains and paralysis subsided in the course of two weeks but the legs were still numb

75 **A Support for Patients with Dyspnea**—A broad pad in the shape of a wide horseshoe is mounted on a stout iron frame which straddles the bed or chair As the patient sits up, he rests his arms on the soft horseshoe pad on a level with the diaphragm and leans his forehead against an adjustable soft head-rest mounted at the deepest point of the horseshoe pad Patients who can get no rest otherwise sleep soundly with this contrivance without the aid of morphin It is a great relief to have the weight of the arms away from the body Three illustrations are given

Hygiea, Stockholm

LXXVIII No 9, pp 529 608

76 *Fermentative Intestinal Indigestion (Nagra ord om den intestinala jäsningsdyspepsien—Schmidt) L Wolff
77 *Syphilis of the Bladder (Bidrag till kännedomen om syfilis i blasan) G Nilson

76 **Fermentative Intestinal Indigestion**—Wolff expatiates on the necessity for exact differentiation of the factors inducing abnormal conditions in the intestines, the treatment required for one may be the opposite of what is required for another He emphasizes the importance of ascertaining the way in which cellulose is digested as the guide to treatment Where stomach and bowel are functioning to excess, cellulose is digested so completely that not enough residue is left to keep the bowels moving properly, and chronic constipation is liable to result When stomach and bowel are functioning inadequately, the cellulose does not get digested enough, and the carbohydrates enclosed in the cellulose ferment Certain persons seem to have a limit for digesting cellulose and above this limit they cannot go The less constitutional this limitation, the easier it is to influence by diet and training When the individual limit at the time is surpassed, the stools soon present the fermentation type, with diarrhea, and symptoms of dyspepsia and neurasthenia "Gastrogenous" and "nervous" diarrhea do not present the fermentation type of stools The fermentative type is semifluid or fluid, light yellow, foamy and full of gas, highly offensive with an odor of acetic and butyric acid When mixed with water, the naked eye readily recognizes the remains of undigested potatoes as round lumps like grains of sago In contrast to this, as a rule, there is very little mucus, and the microscope shows that there is remarkably little muscle residue or soaps Wolff has encountered in the last two years ten cases of this fermentative diarrhea from inability of the intestines to digest cellulose In some there was subacidity in the stomach, in others superacidity, and in some the stomach seemed to be functioning normally In treatment the intestines must be guarded against being burdened with cellulose and substances that ferment readily Farinaceous food of all kinds must be used very scantily, and these restrictions must be kept up for a long time He advises to refrain from everything of the kind for a few days, living on well cooked meat, fish and gelatin preparations, eggs, bouillon, milk, tea, light wines and a little more sugar than usual With this as the standard diet, variety can be obtained with a little honey, infants' artificial dextrinated foods, fine wheat flour dishes and tapioca Later toast and biscuits may be allowed, then purees of fresh young green vegetables, stewed fruits and preserves The diet is thus regulated by the proportion of cellulose and easy digestibility, guided by the character of the stools The tolerance for cellulose may increase, but potatoes, uncooked vegetables and uncooked fruits must be avoided in every case for a long time or relapses may follow He was impressed with the benefit derived in cases of deficient gastric secretion from the systematic administration of hydrochloric acid and pepsin This aids not only in gastric digestion but in the digestion going on in the bowels Even better results were obtained in some cases by supplementing this with pancreas ferment A mild antiseptic for the bowels was also found useful, guaiacol carbonate plus nux vomica in small doses (0 05 gm and 0 1 gm, respectively) He generally concludes the treatment with a course of natural iron mineral waters combined with some saline mineral water This aids in toning up the general health and combating the anemia and nervousness which often accompany this type of "intestinal dyspepsia"

77 **Syphilis of the Bladder**—In both the two cases reported by Nilson treatment for syphilis cured the bladder trouble completely In the first case a man of 44 had recurring hematuria for five years without any subjective symptoms The cystoscope then revealed numerous ulcerations in the bladder and cicatricial changes which suggested tertiary syphilis The man failed to complete the course of treatment advised, and although normal conditions in the bladder were soon restored, he succumbed three years later to aneurysm of the aorta In the other case, some small ulcerations in the bladder had been ascribed to tuberculosis, but they were evidently lesions of secondary syphilis, as they subsided under treatment for syphilitic lesions elsewhere With bladder syphilis there is comparatively little subjective disturbance, and no tubercle bacilli can be detected Syphilitic lesions elsewhere may yield the clue to the diagnosis, or the history of the case and the Wassermann reaction Another point which suggests the syphilitic origin of the trouble is the failure of all other measures to cure the cystitis and the prompt response to treatment as for syphilis

Ugeskrift for Læger, Copenhagen

May 18, LXXVIII No 20, pp 785 830

78 *Drug Tests of Nerve Functioning (Om farmakologiske Funktions prøver særligt med Hensyn til Neurastenien) A Faber and H J Schou
79 *Vaginism (Et ejendommeligt Tilfælde af Vaginisme) A Neermann
80 A Masked Knife for Opening Abscesses in Mouth or Throat (En kacheret Kniv til Aabning af Abscesser i Mund og Svælg) C Mailand

78 **Drug Tests of Nerve Functioning**—Faber and Schou have been testing the response of the vagus and sympathetic nervous systems to injections of epinephrin, atropin or pilocarpin They recapitulate the whole theory of vagotony and the experiments and clinical experiences in this line that have been published, and tabulate the findings with pilocarpin, epinephrin and atropin as obtained in turn in twenty patients with various affections, including a number with neurasthenia No antagonistic action, such as Eppinger and Hess postulate, could be discovered between the different drugs Sixteen responded with equal promptness to pilocarpin and to epinephrin, the response to both was weak in one, in the others the response was somewhat more lively to one than to the other, but in all the reactions to both paralleled each other more or less completely, regardless of the individual pathologic condition Another table gives the findings in the stomach content after an Ewald test meal followed by injection of epinephrin and of pilocarpin The secretion of saliva and of gastric juice was much increased after each, and nothing was observed that might be utilized to distinguish vagotony from sympathicotony Table 4 gives the findings of the blood pressure after subcutaneous injections of epinephrin in 41 persons The blood pressure increased from 35 to 47 per cent in 19 men and from 9 to 43 per cent in 20 women, but the increase averaged only 8 per cent in 2 men with cirrhosis of the liver and ascites, which fact is cited as significant The sugar content of the blood increased after subcutaneous injections of 0 7 mg epinephrin much the same as with alimentary hyperglycemia, the charts of averages of each are practically identical, both in normal persons and in those with signs and symptoms of vagotony or sympathicotony Only in the four diabetics and the two patients with cirrhosis of the liver, the increase in the blood sugar content seemed to be less regular and to occur later than in the others

79 **Vaginism**—Neerman teaches patients with vaginism to combat it by straining as at stool This brings antagonistic muscles into play and there is little if any further pain By this means also it is possible to make an examination without the necessity for general anesthesia, which Veit regards as indispensable In a case described in detail the woman had a right hydronephrosis which possibly may have contributed to the pains

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PITYRIASIS LICHENOIDES CHRONICA

A CLINICAL AND MICROSCOPIC STUDY OF A CASE MISTAKEN FOR LICHEN PLANUS *

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Few diseases offer to the student of dermatology a topic of more absorbing interest than the various cutaneous eruptions which today are included under the term "parapsoriasis" The great diversity in the design and morphology of their efflorescences, their remarkable chronicity and stubborn resistance to treatment, the striking absence of etiologic factors, the surprising resemblances which some eruptions bear to divers other dermatoses, but, above all, the consistent uniformity of the chief histopathologic changes displayed by totally different types of eruptions are some of the features of more than ordinary interest which characterize the parapsoriasis group The vagaries of nomenclature which this group of affections has undergone in the twenty-five years of its existence is a suggestive index of the many angles from which different authors have viewed the whole subject

BRIEF REVIEW OF THE LITERATURE

Beginning with the report of two cases of parakeratosis variegata, by Unna, Santi and Pollitzer,[1] in 1890, a large number of monographs dealing with related dermatoses, but under many disguises and a great variety of titles, soon appeared in the literature Unna's cases occurred in young adult men, who presented an eruption consisting chiefly of flat, slightly elevated papules and plaques, many of which coalesced into bands and circinate lesions, forming an irregular network, in the meshes of which little islands of healthy skin remained Some of the papules were capped by a thickened horny layer, presenting the glistening appearance of lichen planus papules, while others bore fine scales The color varied in different localities, from pink to reddish-brown and violet The eruptions were chronic and progressive, without remissions and exacerbations, appearing on the trunk and extremities Subjective symptoms were lacking Treatment was unavailing The pathologic changes were limited to the papillary layer and the epidermis, the deeper layers of the skin, as well as the follicles and glands, remaining intact The papillary layer exhibited a moderate grade of edema, and dilatation of the blood vessels, with slight perivascular infiltration The epidermis was somewhat edematous, the prickle cells swollen, the transitional layers were normal in appearance, while the horny layer was thickened, showing, here and there, nucleated horn cells The reticulated appearance of the eruption, together with the presence of parakeratosis, induced these writers to name this eruption parakeratosis variegata

Following this report Jadassohn,[2] in 1894, demonstrated an eruption which consisted mainly of reddish, discrete and disseminated papules on the trunk and lower extremities of a male adult The papules varied in size from a pinhead to a lentil, were round and oval in shape, showing fine scales Histologic examination revealed a moderate perivascular, round cell infiltration in the papillary layer, with some proliferation of the prickle cells in the epidermis The granular layer was unchanged, while the stratum corneum presented evidences of parakeratosis Jadassohn gave to this eruption the name "psoriasiform and lichenoid exanthem," and later,[3] in 1900, called it "dermatitis psoriasiformis nodularis" Between 1896 and 1898, similar cases were reported by Neisser,[4] Juliusberg,[5] Pinkus,[6] and Rôna [7]

In 1897, Brocq[8] described a third type, differing from those of Unna and Jadassohn, and characterized by the presence of very slightly infiltrated, sharply circumscribed, large and small plaques, covered with fine scales, and presenting a reddish or pink color Microscopically, there was a moderate infiltration in the papillary layer, a normal prickle cell layer and an absence of parakeratosis Brocq gave to this type the cognomen "erythrodermie pityriasique en plaques disseminees"

In 1899, Juliusberg[9] reviewed the literature of the day and reported two cases of the type first reported by Jadassohn, under the title "pityriasis lichenoides chronica"

Two years later, Crocker[10] described two instances of the disease, under the name of "lichen variegatus," by virtue of the resemblance of the eruptions to lichen planus In 1901, Fox and MacLeod[11] published a paper in which they suggested the name "resistant maculopapular scaly erythrodermia" to the entire group, while Torok,[12] in the following year, included the various types of eruption under the title, "scaling erythrodermia, appearing in disseminated spots"

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* Read before the Section on Dermatology at the Sixty Seventh Annual Session of the American Medical Association *Detroit June* 1916

[1] Unna Santi and Pollitzer Monatsh f prakt Dermat 1890 x Nos. 9 and 10

[2] Jadassohn Verhandl d deutsch dermat Gesellsch, IV Kongr, Breslau 1894 p 524

[3] Jadassohn Festschr Kaposi Arch f Dermat u Syph, 1900 p 880

[4] Neisser Verhandl d deutsch dermat. Gesellsch, IV Kongr 1894 p 495

[5] Juliusberg Arch f Dermat u Syph *1897 xli 257*

[6] Pinkus Arch f Dermat u Syph 1898 xliv 77

[7] Rona Arch f Dermat u Syph 1898 xlvi 147

[8] Brocq Rev gen de clin et de therap September 1897 No 37

[9] Juliusberg Arch f Dermat u Syph, 1899 I, 359

[10] Crocker Brit. Jour Dermat 1900 xii 443

[11] Fox and MacLeod Brit. Jour Dermat. 1901 xiii 319

In 1902, Brocq[13] again studied the subject and decided that the various types of eruption which had been reported under different names presented many points in common, representing merely varieties of the same dermatosis He labeled the entire group with the term "parapsoriasis," and described three types

1 Parapsoriasis en gouttes In this the eruption resembles psoriasis and is characterized by the presence of small, isolated, macular and papular, barely infiltrated, scaly lesions, leaving bleeding points if scratched In this group he included the cases described by Jadassohn and Juliusberg

2 Parapsoriasis lichenoide This is a subvariety clinically resembling both psoriasis and lichen planus, in which there are small papular elements, some of them flattened and glistening, others atrophic in appearance, with a tendency toward confluence of the lesions and the formation of a fine meshed reticulum or of variously sized patches, giving to the whole a variegated and marmorated appearance In this group are included the parakeratosis variegata of Unna, Santi and Pollitzer and the lichen variegatus of Crocker

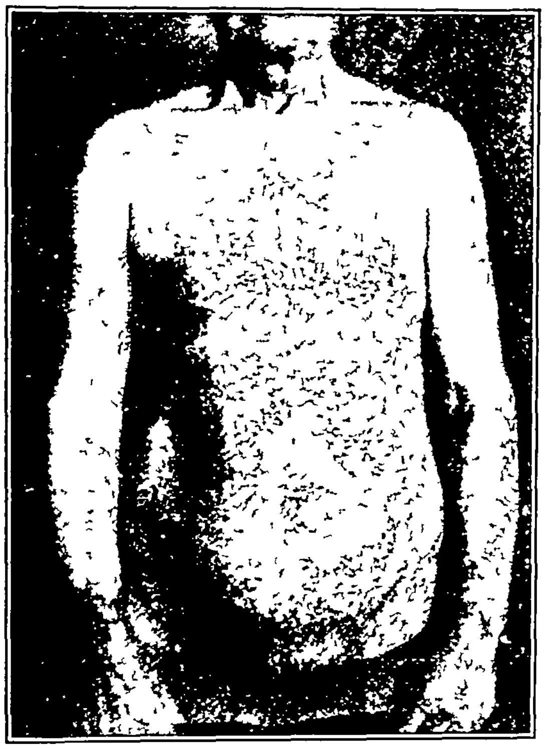

Fig 1—Pityriasis lichenoides chronica, front view

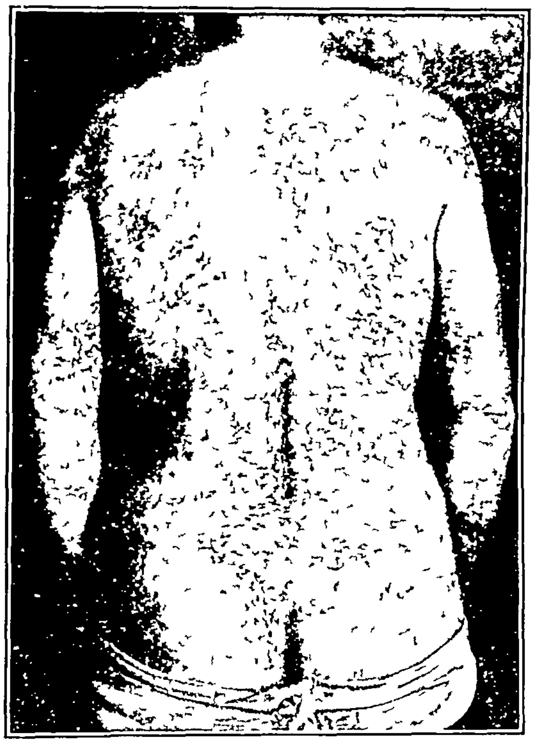

Fig 2—Pityriasis lichenoides chronica, rear view

3 Parapsoriasis en plaques In this the eruption consists of large, sharply defined patches, either slightly desquamating or entirely free of scales, and resembling both psoriasis and dermatitis seborrhoeica This variety was previously described as érythrodermie pityriasique en plaques disseminées Many examples of the last type resemble the early stages of mycosis fungoides[14]

Under the term "xanthoerythrodermia perstans," Crocker,[15] in 1905, described a subvariety of parapsoriasis en plaques, characterized, as the name indicates, by a more pronounced yellowness than usually obtains

Civatte,[16] in 1906, reported two cases clinically resembling pityriasis lichenoides chronica, in which microscopic examination revealed the structure of a tuberculous granuloma in the upper layers of the corium This observer, together with Milian and Pinard,[17] believed that some cases represent a transition or connecting link between parapsoriasis and certain forms of cutaneous tuberculosis—an opinion which, as far as I know, has not been substantiated by other investigators

Although Brocq's classification has been subjected to considerable adverse criticism, more especially by Arndt,[18] it seems to have answered its purpose and has been accepted by the majority of writers on the subject of parapsoriasis, abroad and in this country Among American authors, Brocq's classification is recognized in the publications of Corlett and Schultz,[19] J C White,[20] C J White,[21] Trimble,[22] Sutton,[23] and others That this classification into three separate subdivisions is a purely arbitrary one, however, has been amply demonstrated by several reports of cases in which different types of parapsoriasis obtained in the same patient, at the same time, or at different times It is enough to say, in this connection, that both Csillag[24] and Klausner[25] had observed patients who at one time exhibited an eruption corresponding to pityriasis lichenoides chronica and who, under further observation, developed an eruption resembling parakeratosis variegata To cap the climax Werther[26] recently published the report of a patient whose skin exhibited the three varieties of parapsoriasis at the same time, thus going far to support the contention that Brocq's classification is chiefly one of convenience

The recent American literature has been enriched by two excellent contributions to the subject of parapsoriasis, one, by Heimann,[27] dealing with the histopathology of the group as a whole, the other, by Stokes,[28] who has taken up the subject of experimental therapy and intradermal sensitization reactions in relation to his case of pityriasis lichenoides chronica

In the past few years I have had occasion to study eight examples of various types of the disease and have been fortunate in obtaining biopsy material from all of them Five of these eight cases corresponded to Brocq's parapsoriasis en plaques, the other three, to pityriasis lichenoides chronica Of the latter, one has been incorporated in a previous report,[20] while the second forms the subject of the present paper

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[12] Torök Mracek's Handb d Hautkrankh, 1905
[13] Brocq Ann de dermat et de syph, 1902, p 433
[14] Wise and Rosen Jour Cutan Dis, 1916, xxxiv, 95
[15] Crocker Brit Jour Dermat, 1905, xvii, 119
[16] Civatte Les parapsoriasis de Brocq, Paris, 1906
[17] Milian and Pinard Bull et mem Soc med d hop de Paris April 26, 1907
[18] Arndt Arch f Dermat u Syph, 1900, c 7
[19] Corlett and Schultz Jour Cutan Dis, February, 1909, p 49
[20] White, J C Jour Cutan Dis, 1900, xviii, 536
[21] White, C J Jour Cutan Dis, 1903, xxi, 153
[22] Trimble, W B The Chronic Scaly Erythrodermas, The Journal A M A, July 24, 1909, p 264
[23] Sutton Jour Missouri State Med Assn, December, 1913
[24] Csillag Arch f Dermat u Syph, 1905, lxxvi, 3
[25] Klausner Dermat Wchnschr, 1913 lvi, 469
[26] Werther Dermat Ztschr, 1915, xxii, 320
[27] Heimann Jour Cutan Dis 1916, xxxiv, 203
[28] Stokes Jour Cutan Dis, 1916, xxxiv 343

From the clinical point of view, the interesting features in these eruptions are manifested by the many variations in the types of lesions occurring in different cases, and in their remarkable resemblances to other, nonrelated dermatoses, demanding the consideration of the most careful diagnostic differentiation From the histologic side, the uniformity of the morbid changes depicted in sections derived from totally different types of gross lesions seems to be a very important feature of the entire group In all of these sections, the microscopic changes conformed in all essential details to those so often described in the different forms of parapsoriasis One of the moot points in the histopathology is the question of the presence or absence of parakeratosis In all but one of the cases mentioned above, nucleated horn cells were easily demonstrated, occurring to the same extent in the patchy variety of the disease as they did in the guttate form Both Brocq and Arndt state that parakeratosis was absent in the sections of parapsoriasis in patches, which they had examined, while Civatte, as Heimann points out, emphasized its occurrence in that type It is probable that parakeratosis forms a part of the minute changes in the different varieties of the affection, but that its occurrence is not always readily demonstrable

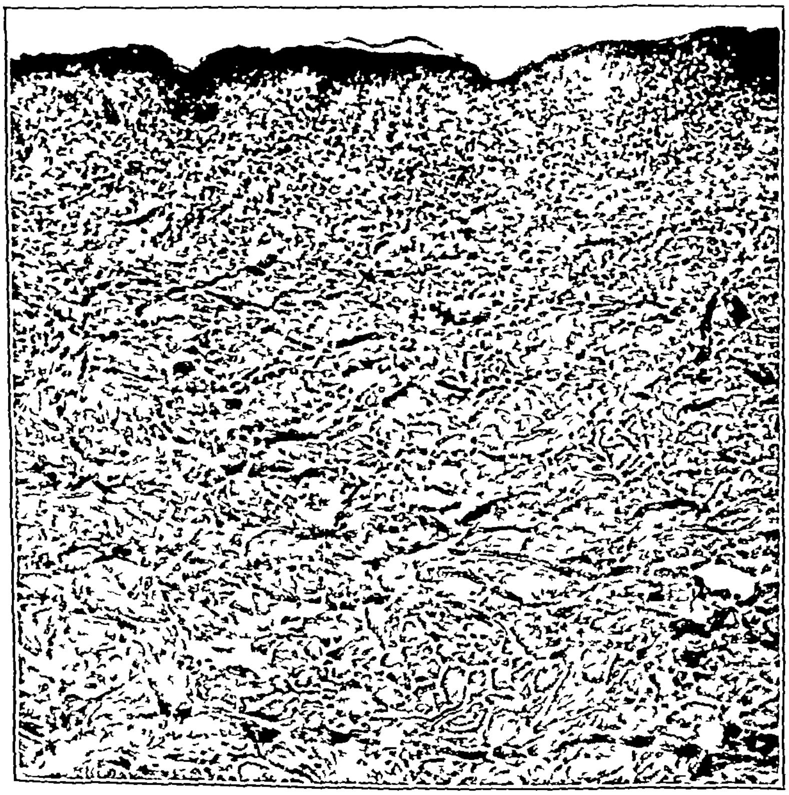

Fig 3—Microscopic section of papule (low power) showing edema of epidermis and upper corium with moderate cellular infiltration

REPORT OF CASE

The following brief report concerns a case of the lichenoid type of parapsoriasis, presenting an unusually widespread eruption The patient, from Dr Fordyce's service at the Vanderbilt Clinic, was presented before the New York Dermatological Society at its October, 1915, meeting, where the majority of the members who examined the patient's skin considered the eruption to be one of lichen planus

History—I C man, aged 58, a native of this country was married and had always been in the best of health, with the exception of an attack of rheumatism, three years before Under the administration of salicylates and potassium iodid the rheumatic pains promptly disappeared and have not returned since There is no history of a drug rash following the ingestion of these medicines The family and personal histories have no bearing on the present eruption Ten years ago an epithelioma was removed from the left temple by Dr Gottheil, the operation leaving a smooth, white scar There are no evidences of syphilitic disease

Examination—The patient is well nourished and apparently in good health Physical examination reveals no abnormalities The Wassermann test is negative and the urine is normal The cutaneous sensibilities are everywhere undisturbed

Skin The eruption made its appearance about two and a half years ago on the anterior surfaces of the forearms, in the form of small, red, round and oval papules which itched slightly Shortly after, similar lesions developed on all parts of the body with the exception of the neck, face and scalp and the palms and soles The mucous membranes remained free Since the onset of the trouble, none of the lesions have shown any tendency toward retrogression With the spread of the disease, pruritus has become a serious symptom, often depriving the patient of sleep Scratch marks, however are not present

With the exception of the areas mentioned above, the entire integument including that of the genitals, is involved The lesions consist of innumerable macules and papules, varying in size from a pinhead to a lentil These elements are round and oval, of a dull red, smooth, free of scales, their surfaces somewhat burnished when viewed at an angle The lesions are everywhere closely crowded, more so on the arms and legs than elsewhere A distinct grouping of the macules and papules occurs on the forearms, anteriorly, and on the skin overlying the shins Similar grouped elements are also seen on the abdomen and flanks On various parts of the upper and lower extremities, a number of the lesions have coalesced so as to form patches with irregular borders, sharply defined against the surrounding normal skin These patches vary in diameter from a quarter of an inch to an inch and a half Their surfaces are reddish-pink on the forearms, somewhat violaceous on the legs smooth and glistening in appearance On the anterior portions of the forearms, several areas present a linear arrangement of the papules forming curved lines from 1 to 2 inches in length, and running parallel with the long axis of the arm The papular lesions predominate in all parts of the eruption, being especially marked on the extremities and trunk, most of them are flat topped sharply outlined but not angular or polygonal in various parts of the body, closer scrutiny reveals the presence of scattered papules which possess an umbilicated center The macular elements are most numerous on the backs of the hands, the upper part of the chest and on the genitals Many of the lesions appear to be in the transitional stage from macule to papule Neither pigmentation nor scaling forms a part of the eruption

Forcible scratching of a papule with a curet results in a brisk oozing of blood

Treatment and Result—Prolonged administration of Fowler's solution at the hands of other physicians, proved unavailing in effecting a retrogression of the lesions, or in stopping the progress of the disease Three autogenous serum injections had no effect on the pruritus, nor did they effect any change in the skin lesions The Kromayer light was applied to the skin of the abdomen in six weekly exposures, resulting in a partial fading of the papules, for the time being, as soon as the last traces of irritation from the ultraviolet rays had subsided, the skin assumed the same appearance as that of the untreated areas

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[20] Wise Fred New York Med Jour Nov 20 1915

Histopathology—A lentil sized papule, including the adjacent normal integument, was removed with a cutaneous punch, from the skin between the shoulder blades, and prepared for microscopic study

The main pathologic changes consisted of a rather well defined cellular infiltration, located chiefly in the papillary and subpapillary portions of the corium, a pronounced edema, with minute vesicle formation in the subepidermal portions of the skin, marked vascular dilatation in this region, with granular degeneration of the collagenous tissue, in the deeper parts of the corium the collagen was edematous, the walls of the blood vessels were thickened and the glandular structures showed signs of degeneration In the epidermis, edema of varying intensity prevailed

The horny layer was thin and adherent Nucleated horn cells were present in only one very minute portion of this stratum, corresponding to only two or three adjacent papillae, the rest of the epidermal surface presenting no signs of parakeratosis The stratum lucidum was absent The granular layer was attenuated, for the most part consisting of a single layer of cells with well preserved cell bodies and nuclei The stratum spinosum appeared to be normal in some areas, moderately increased in others In the latter, evidences of intercellular and intracellular edema were pronounced, the nuclei being distorted and crowded to one side, or completely surrounded by a clear protoplasmic zone, while the intercellular spaces were widened and bridged by prominent prickles In several areas a beginning intra-epidermal vesicle formation was apparent, the contents of the little vesicles consisting of scattered, fine granules and cell detritus The basal cell layer varied greatly in its appearance in different parts of the section, while some portions presented a normal appearance of the palisade cells, sharply defined against the corium, other portions exhibited a complete disorganization of these cells, resulting in an obliteration of the boundary between epidermis and corium

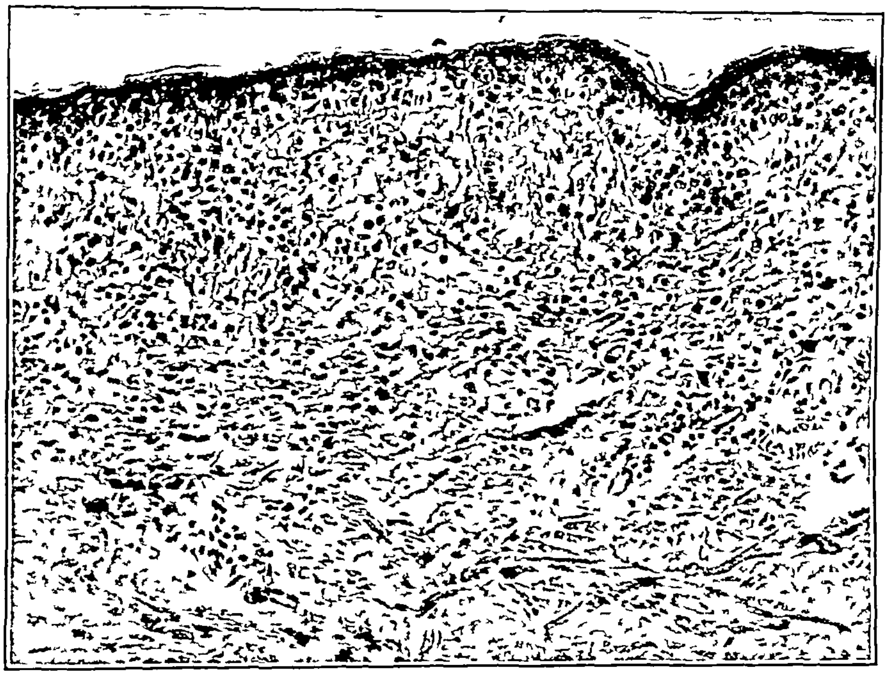

Fig 4 —Microscopic section of papule (high power), showing edema of epidermis, subepidermal vesiculation, edema of corium, infiltration of round cells in upper part of corium, areas of collagenous degeneration and perivascular infiltration

The rete pegs were flattened and distorted by the subjacent edematous changes in the corium A few mitotic figures were seen here and there Wandering cells in the epidermis were not observed, nor were pigment granules

In the pars papillaris an advanced grade of edema of the papillary bodies was present The papillae were flattened and disorganized, their summits being displaced by a reticulum of vacuoles and small vesicles, separating them from the overlying epidermis, and resulting in an edematous meshwork which involved the papillary and subpapillary portions of the corium to a high degree The blood vessels and lymphatics were increased and markedly dilated, the vascular endothelial lining being distinctly swollen A moderate perivascular infiltration of small round cells was present in the papillary bodies, deeper down, the infiltration was more pronounced, the cells being more numerous and closely packed about the vessels and lymph spaces, the cell masses appeared in elongated bands as well as scattered aggregations, independent of vessels The infiltration, taken as a whole, was rather well defined at its lower boundary The elements consisted almost wholly of small round cells with well stained nuclei, together with a small number of fibroblasts Plasma cells and mast cells, as also pigment granules, were not observed The collagenous tissue of the pars papillaris was degenerated, most of it being edematous and granular in appearance The section contained a hair follicle, surrounded by a sleeve of infiltrating cells and a few fibroblasts The pars reticularis presented a moderate grade of edema, with, here and there, areas of granular degeneration of the collagen The coil glands, arrectores muscles, and blood vessels all presented evidences of degeneration, the walls of the vessels being markedly increased in thickness The elastic tissue was diminished and somewhat fragmented in the upper corium, but lower down it appeared to be unaffected

SUMMARY

As has been stated, the eruption exhibited by this patient so closely resembled a widespread lichen planus that a number of eminent dermatologists even after careful scrutiny, held the opinion that it was, indeed, an unusual example of that dermatosis The localization and distribution of the lesions, their color, consistence, burnished surface, configuration, occasional grouping and linear arrangement, together with the fact that the patient complained of considerable itching of the affected skin, were determining factors in the diagnosis There were, however, certain points of departure from the typical picture presented by a disseminated eruption of lichen planus The papules, instead of being predominantly polygonal, were for the most part oval and round in outline, umbilication was seen in only a small proportion of the lesions, most of them presenting a smooth, glistening surface, without a trace of delling, the fine, whitish, adherent linear scaling—Wickham's striae—so characteristic of lichen planus papules, was lacking Finally, the absence of lingual and buccal mucous membrane lesions, in a case presenting an eruption so extensive in its distribution, contributed an added element of doubt to the diagnosis of lichen planus (In Werther's case, however, the buccal mucosae were affected by the disease)

From the histologic standpoint, the minute structure was seen at a glance to be quite different from the characteristic picture of lichen planus, and to conform to that which, when correlated with the clinical appearances, left no other diagnosis open for consideration than that of parapsoriasis It is well known that the microscopic changes in this group of affections is by no means pathognomonic, in the same sense that the histopathology of lichen planus is pathognomonic, for the various pathologic alterations peculiar to parapsoriasis may also obtain in many other cutaneous diseases, or may at least play a minor part in the general morbid process of other dermatoses A diagnosis of parapsoriasis based on the microscopic findings alone is considered to be, as pointed out by Arndt, a rather uncertain procedure, and should be made with circumspection Such a diagnosis is fully justified, however, when the clinical and histologic data are considered side by side and are correlated to one another, as was done in the present instance

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ABSTRACT OF DISCUSSION

Dr Oliver S Ormsby, Chicago I have seen a number of these cases and think the classification of Brocq is correct from a clinical standpoint We see cases with small lesions and others of the large, flat variety, and while it seems rather odd that lesions apparently so different should be classed together, yet, as Dr Wise pointed out, they are histologically the same. In one of my cases three distinct classes of lesions were present They are very difficult to clear up Occasionally a patient gets well We had such a case That patient had a parapsoriasis and the lesions cleared up within two days after the use of salvarsan In another case treated with chrysarobin which Dr Schamberg furnished the lesions cleared up almost entirely, then the patient disappeared for some time and when he came back the lesions had recurred, but he gave a history of having had the eruption a number of years and that he had never received any benefit from any treatment except the chrysarobin

TRAUMATIC PULSATING EXOPHTHALMOS *

WILLIAM ZENTMAYER, M D

PHILADELPHIA

Although comparatively a rare condition, traumatic pulsating exophthalmos is of so serious and distressing a nature that the report of additional cases in which operation was performed cannot but be of interest and value Notwithstanding that after a thorough study and analysis of the surgical procedures and therapeutic measures employed in the cases reported in literature and in their own practices, prior to July 1907, de Schweinitz and Holloway[1] were of the opinion that in view of the uniformly successful results attending operations on the superior ophthalmic vein "it would seem that this procedure should be considered before ligation of the carotid, and certainly should precede ligation of the second carotid provided the first operation has failed to produce the desired result," a review of the literature that has appeared since this was written shows that for the alleviation of the symptoms of the traumatic type, at least, the operation earlier introduced, ligation of the common carotid, is the one still usually performed

There can be little doubt that in the majority of cases of traumatic origin the lesion is a rupture of the internal carotid in the cavernous sinus, and that the dilatation of the ophthalmic veins and of the nasofrontal and angular veins is the result of the venous stasis thus created It therefore seems logical to seek to prevent the stasis rather than to remove the end-result, and this has no doubt been the thought of those who have preferred to operate on the vessels of the neck Another reason why others have been deterred from operating on the ophthalmic vein is that temporary unfavorable symptoms developed in three of the seven cases, reports of which were collected by de Schweinitz and Holloway, and that there has since been one fatal result[2] or they have foreseen the danger of thrombosis of the basal sinuses, the possibility of which was emphasized by these authors Another reason that the orbital operation has not more often been performed has doubtless been that, owing to the gravity of the condition, the general surgeon has been usually consulted, and the topography of the triangles of the neck is more familiar to him than is that of the region preempted by the ophthalmic surgeon

Following are the notes of my own cases

Case 1—While A M, Italian, aged 26 years, admitted to Wills Hospital, March 27, 1906, was seated at home, Nov 21, 1905, the left eye suddenly bulged forward accompanied by a noise in the temporal region and in the left ear About one month before this date, while assisting three other men to carry a heavy beam, he severely strained himself in an effort to hold it after the others had let go their hold Two weeks later he began to suffer from headaches There had been little change in the appearance of the eye since it became prominent There was nothing in either the personal or family history bearing on the present condition

L E proptosed 8 mm straight forward All movements are abolished except inward and downward, both of which are restricted There is congestion of the lids and of the conjunctiva There is neither orbital venous tumor nor pulsation Faint bruit Pupil 5 mm in diameter, prompt to light V R E 6/6, L E 6/30

The ophthalmoscope shows R E Numerous retinal hemorrhages Veins engorged Papilla swollen L E Small striated hemorrhages at the upper margin of the papilla Veins engorged and retina hazy

Otologic, rhinologic and neurologic examination negative

May 1, 1906, the left common carotid was ligated by Dr G G Davis There were no cerebral symptoms, and the patient was discharged ten days after the operation At that time the neuritis in the right eye had increased, and the veins were very much engorged There was no change in the proptosis or in the movements of the globe No subjective bruit

One month after the operation the proptosis and movements of the globe remained unchanged, and there was no return of the bruit In the right eye the neuritis had almost subsided V R E 6/6, L E 6/20

Case 2—D L, American, aged 21, miner, admitted to Wills Hospital Jan 15 1916, was struck in the right occipital region by a mine car, July 7, 1915 He remained unconscious for 5 days No operation was performed On regaining consciousness the right eye was prominent and there was a buzzing noise in the right ear "which kept time with his heart" There was no diplopia, headache or pain The left side of the face was paralyzed There had been amnesia lasting about one month For the facial paralysis he had vibratory massage and electricity, and to this he attributes the improvement that has taken place in this symptom The left eye has been at no time involved

R E Proptosed 10 mm The superior orbital sulcus is pushed forward by a soft mass in the orbit above the globe, ordinarily more prominent to the temporal side, but when the lids are closed more marked, especially to the nasal side, and a thrill can then be detected over the mass There is a loud swishing bruit synchronous with the heart systole The bruit

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] De Schweinitz and Holloway Pulsating Exophthalmos Philadelphia W B Saunders Co 1908

[2] Mentioned by de Schweinitz in discussions of Wilder's paper (Footnote 9)

can also be heard over the carotid near the angle of the jaw, and also over the temporal bone and inferior orbital margin Pressure on the carotid causes both the objective and subjective noises entirely to disappear The bulbar conjunctival vessels are greatly distended, one large vessel extending from canthus to canthus The external rectus muscle is paralyzed The right pupil is 3 5 mm and prompt to light, L pupil 2 5 mm and prompt to light R E 20/20, L E 20/15 Ophthalmoscopic examination R E Veins and arteries enlarged and somewhat tortuous, more particularly in the nasal branches The venous blood current is very dark

The patient was transferred to the Pennsylvania Hospital under the care of Dr G S Crampton, where he was further studied with a view of determining the proper surgical procedure Dr Crampton has kindly supplied the following notes Roentgenoscopy revealed no evidence of a fracture of the skull nor any evidence of any bone change, as, for instance, from pressure of an aneurysm Neurologic examination Slight fine tremor of hands Hands are clammy and show slight capillary stasis Knee jerks apparently exaggerated Plantar reflex active No Babinski or ankle clonus Slight Graefe lid sign on left side Distinct weakness of the muscles of the left face involving both upper and lower branches of the seventh nerve The tongue, however, is protruded straight and the eye can be closed Definite loss of taste to sugar and salt on anterior two thirds of tongue Auditory nerves are equally active on both sides Urinalysis Specific gravity 1 023 No albumin, sugar or casts

Digital pressure was made on the right carotid for fifteen minutes at a time to accustom the patient to diminished cerebral blood supply This caused a tingling sensation in the hands, and the proptosis diminished slightly

February 23, Dr Francis T Stewart ligated the right common carotid A 3/8 inch ribbon of fascia lata 1/8 inch thick was passed around the artery as a collar and tightened with silk sutures until a definite thrill could be felt in the vessel, and the temporal pulse had disappeared A single turn of a silk ligature was made around the fascia, and the long ends were tucked in the wound for use in tightening the ligature later At the end of the operation the temporal pulse was not palpable, but the bruit in the temporal region could still be heard in diminished degree No thrill over the globe Next day the fundus showed no change February 29, stitches removed A catgut ligature was fastened to the old silk ligature and pulled through Complete ligation was done For about one minute after ligation the temporal pulse on the right side could not be felt, but after that it reappeared, but quite small, as though collateral circulation had been established

March 3, the eye looked remarkably better Only slight proptosis and no thrill or bruit The patient was discharged March 8 There was a slight increase in the proptosis, and pulsation could again be felt in the internal angular vein, when compression was made below March 13, the patient returned to the hospital with edema of the extremities, right chest and abdomen Urine Specific gravity 1 030 Cloud of albumin Granular and hyalin casts No sugar

March 24, proptosis fully as marked as before operation Some edema of the conjunctiva and corneal haze Retinal veins no longer engorged or tortuous Papilla slightly pale No fundus lesions Bulbar movements full except limitation of outward excursion Pupil normal No subjective noise No thrill Bruit faint and confined to the orbital region

March 28, patient still confined to bed with nephritis

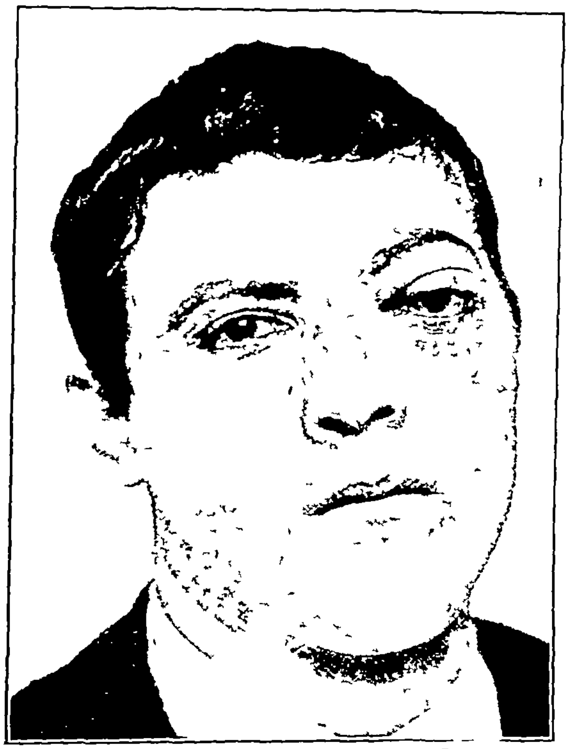

Fig 1 (Case 1) —Traumatic pulsating exophthalmos

The following brief notes of a case of spontaneous pulsating exophthalmos reported by Dr Frederick Krauss are added because the case illustrates one of the dangers of ligation of the orbital veins and because of the method of operating

F, aged 59 years No history of trauma Family history negative Pronounced right sided exophthalmos with a loud bruit heard over the face, loudest over the anterior portion of the temporal bone No ocular pulsation V 5/15 Wassermann negative Blood pressure Systolic 215 mm Under internal medication and carotid compression gradual subsidence of the symptoms took place for a time, but this was followed by sudden severe pain in the right eye followed by intense proptosis and very pronounced pulsation The left eye also became markedly proptosed Pressure on the right carotid caused a disappearance of the subjective and objective noises, but had no effect on the exophthalmos The movements of the right eye were abolished A large pulsating vessel was found on the nasal side of the eye ball within the orbit There was enormous dilatation of the retinal veins with retinal and choroidal hemorrhages and a low grade uveitis

Operation An incision was made directly over the eyebrow from the outer orbital line to the root of the nose and then curving down to the canthus The periosteum was separated from the orbit, dislocating the contents of the orbit within its folds The pulsating vessel being readily felt, an incision was made near it through the periosteum, disclosing enormously dilated vessels throughout A pedicle needle with a catgut ligature was passed around the largest pulsating vessel and tied The pulsation and subjective bruit ceased Several weeks later, pulsation returned near the upper-inner orbital margin, where a small sinus remained Deep massage three weeks after the operation caused a tremendous hemorrhage, which was immediately controlled by pressure against the bony orbit Several days later there was a spontaneous recurrence of the bleeding for which, an assistant failing to control the common carotid was tied with the result of causing a cessation of pulsation and an immediate healing of the sinus Four weeks later the proptosis was still pronounced and there was a return of intermittent pulsation

Krauss states that he is convinced that in tying off the orbital vessels more than one strong ligature should be used

The reference in literature to pulsating exophthalmos were brought down to the year 1907 by de Schweinitz and Holloway, and Bedell[3] in 1914 gave an abstract of the cases of traumatic origin that he was able to find in the literature covering the period between the foregoing dates Following are, in abstract, additional cases of traumatic form reported during the foregoing period, and cases since reported The brief abstracts of the first six cases are taken from an inaugural dissertation by Johannes Eysen[4]

Reported by Wagenmann (1900) Shot in the right temple R E exophthalmos Pulsation Bruit Paralysis of the external rectus and of the oculomotor nerve Ptosis Distention and tortuosity of the conjunctival vessels L E proptosis and pulsation Compression of carotid without result Ligation of the right common carotid Transient effect One year after operation R exophthalmos very marked Cornea hazy Blind

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[3] Bedell Arch Ophth, 1915, xliv, No 2

[4] Eysen, Johannes Inaug Diss, Berlin, 1908

Reported by Nettleship (1901) Bilateral typical pulsating exophthalmos following injury Ligature of common carotid Cure Optic nerve atrophy

Reported by Bossalinow (1901) R pulsating exophthalmos following fall on the right temple Potassium iodid Compression of the carotid Cure

Reported by Reuchlin-Schlupmann (1902) Bilateral exophthalmos following a fall against an iron pillar Orbital pulsating tumor Eyes practically immobile Chemosis Ptosis R pupil sluggish, left normal Bruit Compression resulted in improvement R common carotid ligated Cure except for slight abducens paresis

Reported by Golowin (1903) R pulsating exophthalmos following a gunshot wound Central corneal opacity Anesthesia of conjunctiva and cornea Optic atrophy Temporary resection of the outer wall of the orbit Ligation of the ophthalmic vein Disappearance of the exophthalmos During healing, purulent keratitis with hypopyon Paralysis of inward and outward movements

Reported by Geiszler (1907) L pulsating exophthalmos following injury Bruit Chemosis All movements of the eyeball restricted but no paralysis of the abducens L pupil smaller than right V = 5/20 Papilla congested Retinal veins markedly congested and tortuous Compression of common carotid Result?

Reported by Thierry[5] (1908) O D M, 24 Shot in the right temple Ball passed through brain and lodged beneath the temporal muscle immediately opposite Typical symptoms of arteriovenous aneurysm in the cavernous sinus No treatment Ligation of common carotid contemplated

Reported by Bettremieux[6] (1909) O D M, 25 Blow on the head Pulsating exophthalmos developed six months after the accident Objective and subjective bruit, the latter like a jet of escaping steam V = 1/3 Papilla congested Retinal arteries slightly contracted Veins dilated Compression of carotid, diminished bruit and pressure on the angular vein at the upper-inner margin of the orbit completely arrested it Diagnosis, arterial compression at the apex of the orbit or a small arterial aneurysm in same situation He believes that the arrest of the bruit by pressure on the orbital vein excludes arteriovenous aneurysm He thinks that this phenomenon is perhaps more common than is supposed

Reported by Natanson[7] (1909) Bilateral M Blow on head Extensive ectasia of the superior ophthalmic vein at the upper inner orbital margin of both orbits Cyanosis of the area of the anterior facial vein due to anastomosis with the superior ophthalmic vein Bruit synchronous with systole of heart Patient would not submit to operation Diagnosis, arteriovenous aneurysm with rupture of the internal carotid in the cavernous sinus

Reported by Dodd[8] (1911) O D M Patient slugged and rendered unconscious Following day facial palsy Panophthalmitis developed Eye enucleated Swelling of the conjunctiva continued two weeks, when proptosis of the right eye with distinct bruit developed Ligation of right common carotid Complete cure

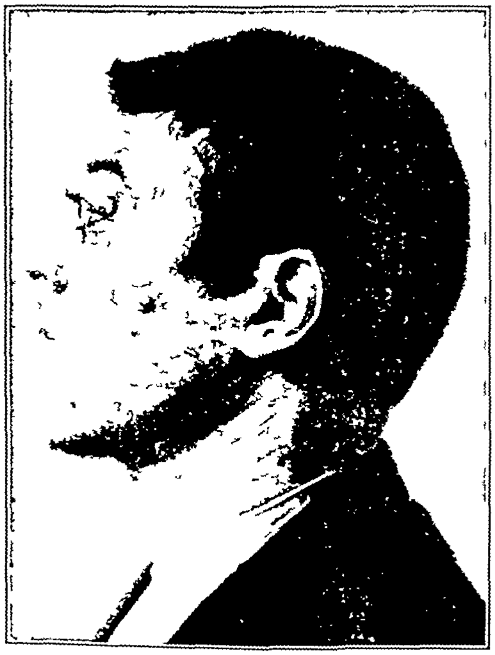

Fig 2 (Case 1) —Traumatic pulsating exophthalmos

Reported by Wilder[9] (1911) R E M, 42 Rendered unconscious by a blow over the right eye On recovery, severe pain, roaring in right ear, diplopia Right eye began to protrude Marked distention of the angular veins at the superior border of the orbit Only slight abduction preserved Marked bruit most intense with carotid systole over right side of head and eye, also at times faintly on the left side Roaring tinnitus No pulsation of orbital contents On compression of carotid, bruit and subjective noise ceased Diagnosis, aneurysm of the intracranial portion of the internal carotid Right common carotid tied Bruit objective and subjective ceased at once Exophthalmos and pain gradually subsided, and movements of globe gradually restored In five weeks, vision had risen from 20/60 to 20/30 Revised diagnosis, aneurysm of the cavernous portion of the carotid which did not communicate directly with the sinus

Reported by Wilder[9] (1911) R E M, 38 Fracture in parieto-occipital region, with insertion of a silver plate five or six months before exophthalmos developed Three months later struck in back of head with iron bar and rendered unconscious After seven weeks, right eye protruded, followed in three weeks by pain and watering of eye Marked proptosis eye divergent, pupil immobile and dilated T + Pain in right side of head High pitched bruit heard all over head synchronous with heart beat V = 20/40 Retinal vessels distended Ligation of right common carotid Bruit ceased at once, exophthalmos diminished Almost complete recovery from third nerve palsy Nine weeks later, return of subjective bruit and still later of the objective bruit Four months after operation, increase in exophthalmos Internal carotid and facial vein tied Three days after operation complete paralysis of the left forearm and hand with difficulty in speech No amnesia When last seen, still some muscular weakness, exophthalmos very slight, motility good, veins less prominent V = 20/30

Reported by Ipsen[10] (1912) O D M Severe injury to head Two months later, typical pulsating exophthalmos Intense pain in the head Bruit Intra-ocular tension with Schiotz 45 mm Retinal vessels dilated Ligation of common carotid Cure

Reported by Balbuena[11] (1913) O S Male Shot in the middle of the forehead Same day loss of vision, proptosis of eyeball and lids Pulsation synchronous with radial pulse Bruit marked at the upper-inner angle of orbit Papilla atrophic Diagnosis, aneurysm in orbital vessels anterior to sphenoid fissure Twenty-one subcutaneous injections of 4 per cent gelatin without improvement Six intravenous injections at intervals of from eight to ten days effected a cure

Reported by Feruglio[12] (1913) O S Male Injury at the internal third of left lower lid, resulting in exophthalmos, headache vomiting Vision normal but cerebral symptoms recurred Pulsation of globe synchronous with arterial pulse Loud murmur over closed lids and cranium Slight hyperemia and edema of retina Left common carotid tied, causing reduction of exophthalmos and restoration of movements of globe Fifteen days later, return of symptoms Right common carotid tied without result Author emphasizes importance of a centrifugal venous pulse in establishing the diagnosis of arteriovenous aneurysm in a case of exophthalmos

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[5] Thierry Rec d opht October 1908 p 469
[6] Bettremieux Ann. d ocul Brussels 1909 cxlii 33
[7] Natanson Ztschr f Augenh 1909 xxii 81
[8] Dodd Tr Chicago Ophth Soc., March 20 1911
[9] Wilder Tr Am Ophth Soc 1911 xii 832
[10] Ipsen Hospitalstidende Sept 11 1912
[11] Balbuena Arch de oftal 1913 xiii 72
[12] Feruglio Ann di Ottal Pavia 1913, xlii 287

Reported by Rubel[13] (1913) O S Male After a blow on the head there was loss of vision in O S, and deafness on both sides Three and a half years later, typical left sided pulsating exophthalmos Papilla atrophic Retinal veins dilated Arteries normal No edema of the retina, but numerous bright to light yellow dots extending to the extreme periphery of the fundus The veins were in places obscured Ligation of the common carotid Eight and one half months later, the spots had disappeared They were the result of venous congestion, but their nature was not determined Result improved

Reported by Märtens[14] (1913) Unilateral pulsating exophthalmos three months after gunshot wound of temple Roentgenoscopy revealed four shots within the cranium, one of which was in the cavernous sinus No further details

Reported by Sym and Miles[15] (1914) O S Male, 46 Thrown from a trap on the crown of his head Symptoms of fracture of the middle fossa of the base of skull On regaining consciousness, had buzzing in both ears A few days later, rapid development of pulsating exophthalmos of right eye Blood oozing from conjunctival points Failure to control hemorrhage led to enucleation of the eye Eight weeks later, fellow eye began to proptose V = 6/18 Retinal veins congested Globe almost fixed, small degree of lateral movements Blowing murmur over eye and temple synchronous with heart Diagnosis, traumatic arteriovenous aneurysm on the right side, pressure telling back on circular sinus of left side Right common carotid tied Immediate cessation of buzzing Three weeks after operation, V = 6/6 Full rotation of the globe No exophthalmos No subjective symptoms Five months later, complete recovery

Reported by Weil[16] (1914) M O S Thrown from bicycle, striking left side of head Rapid development of typical aneurysm in the cavernous sinus Paralysis of abducens and accommodation V normal Marked engorgement of the anterior ciliary veins and of the vessels of the papilla One month after accident, left common carotid tied with only slight benefit The exophthalmos only slightly improved—in five weeks, 2 mm out of 5 mm

Reported by Bedell[3] (1914) Bilateral M, 39 Thrown from car, striking head against a tree Fracture of base Dizziness and headache followed appearance of orbital mass having pulsation and bruit Symptoms of pulsating exophthalmos Outward movement of globe limited Retinal vessels overfull No visible pulsation of globe V = 2/30 Left eye, large mass of tortuous dilated blood vessels in upper lid A large vessel at upper-inner angle of the orbit Abducent paralysis Bruit and blowing murmur heard over supra-orbital ridge and entire head Retinal veins engorged Occasional pulsation of the retinal arteries Hearing on left side much reduced Roentgenoscopy revealed separation through the frontal bone, extending from deep in the orbit to the vertex between the parietals Carotid pressure, or pressure on the ophthalmic vein deep in the left orbit, stops pulsation and bruit Patient refused operation

Reported, in discussion, by Oertel[17] (1914) Bilateral M, 39 Fracture of the base of the skull Two days later proptosis of left eye and one month later of the right eye Intense pain Pupils dilated, globes fixed Distinct pulsation of both globes Small pulsating vessel extended across the bridge of the nose V = fingers at 2 feet Under administration of potassium iodid, sedatives and local scarification, return to normal in two and a half months Author strongly advises conservative treatment

Reported by Silvan[18] (1914) O D M, 16 Fall on head Typical pulsating exophthalmos Globe immobile, pupil dilated Paralyses of left facial Preservation of the function of the eighth, ninth, tenth, eleventh and twelfth nerves Papilla over capillary, veins turgid V = 1 p Pulsation and bruit Ligation of right common carotid Marked reduction in exophthalmos V = 2/3

Reported by Cantonnet[19] (1914) O D Soldier Severe hemorrhage of the internal maxillary artery Seven months later exophthalmos, varicose veins in lids Pulsatile tumor Mechanical ptosis Only slight adduction remaining Retinal veins and arteries show pulsation Arteries contracted, veins dilated Papilla pale Eye blind To be treated with gelatin injection

Reported by Posey[20] (1915) Bilateral M, 66 Fall on head with fracture of skull Vision began to fail shortly after the accident Roentgenoscopy three years after accident, negative Mass of veins, which pulsate and convey a thrill on palpation, felt under upper rim of orbits O D V = fingers at 12 inches, O S 1/60 Low grade optic atrophy Retinal veins much distended and tortuous Eyes nearly immobile Also symptoms indicating cerebellar involvement from a destructive lesion occasioned at the time of accident Rapid disappearance of symptoms after ligation of right common carotid and resection of the orbital veins V = O D 1/60, O S 6/60

Reported by Ruata[21] (1915) O D M, 16 Six months after the accident, marked exophthalmos with pulsation synchronous with radial Visible pulsation Pressure on the carotid diminishes the exophthalmos Movements of the globe full Pupil dilated and fixed V = 1 p Papilla over capillary and margins diffuse Veins extraordinarily tortuous and engorged Arteries reduced, pallid and fusiform Paralysis of the left facial with lagophthalmus Retinal veins dilated and tortuous V = 0 4 Small temporal field Ligation of the right common carotid Result, exophthalmos and venous engorgement of orbit persisted White plaques appeared between papilla and macula O S Lagophthalmus persisted Eye otherwise normal V and field normal Final result, exophthalmos lessened V = 0 01

Reported by Brazeau[22] (1915) Unilateral O S M, 39 Blow on left side of face four years previously Two days after injury, roaring noise preventing sleep Three months later, proptosis, dizziness and diplopia Enlargement of supra-orbital veins Paresis of external rectus V = counting fingers Distinct bruit over eyeball Retinal vessels markedly dilated Optic neuritis Neff clamp applied to the common carotid Pulsation and bruit disappeared in four days Six months later, still some exophthalmos V = 6/15 Final result two years later, V = 8/10 All phenomena disappeared, and there were no untoward cerebral symptoms The author considers that this procedure meets the requirements of occlusion, for it prevents danger of secondary hemorrhage which attends sudden stoppage of blood current, and prevents cerebral ischemia and late cerebral softening, resulting in 50 per cent in death It also shortens the period of recovery, in this particular case the patient returned to work within thirty days of the operation, and two years later there were no untoward results

Reported by de Schweinitz and Holloway[23] (1916) O S M Fracture of skull from motorcycle accident On regaining consciousness patient noted that the vision of O S was affected One week after accident, left temporal decompression was done Five days later some exophthalmos, limitation in all rotations of the globe except downward Temporal half of papilla pale, retinal veins full-sized Fingers at 1 m Hand field full One year later all the symptoms of pulsating exophthalmos At upper-inner region of orbital margin, large venous ectasia with thrill and pulsation Smaller one in lower lid Disseminated retinal hemorrhages Veins full and tortuous Rotations of globe full except for slight limitation of outward rotation V = 6/22 A precautionary ligature was thrown about the carotid but not tied previous to cutting down on the orbital ectasia The dilated vein was ligated and excised Two months later there was return of pain and pulsation on deep pressure in the inner-upper portion of the orbit Displacement of globe same as before the operation On lying down there was an intermittent bruit de piaulement

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[13] Rubel Klin Monatsbl f Augenh, July, 1913 p 62
[14] Märtens Klin Monatsbl f Augenh, 1913, p 523
[15] Sym and Miles Edinburgh Med Jour, 1914 xiii, No 5
[16] Weil Klin Monatsbl f Augenh, January, 1914, p 119
[17] Oertel Tr Acad Ophth, Boston, October, 1914
[18] Silvan Riv ven d sc med, 1914 lxi, 51
[19] Cantonnet Arch d'opht, 1914, xxxiv, 583
[20] Posey Ann Ophth, 1915, xxiv, 203
[21] Ruata Arch di Ottal, Pavia, 1915, xxii 307
[22] Brazeau California State Jour Med, 1915, xiii 307
[23] Tr College of Phys of Philadelphia, January, 1916

SUMMARY AND CONCLUSIONS

An analysis of the twenty-nine cases collected in this paper shows that

The common carotid was ligated sixteen times, resulting in a cure in seven, improvement in five and failure in four

Combined ligation of the common carotid and the ophthalmic vein was done once, resulting in a cure

Combined ligation of the internal carotid and the facial vein was done once, resulting in a cure

Ligation of the orbital veins was done once, resulting in slight improvement

Slow ligation of the carotid was done twice, resulting in one cure and one slight improvement

Ligation of both carotids was done once, resulting in failure

Compression of the carotid and internal treatment was followed in four cases, resulting in cure in two, improvement in one, and result unknown in one

Gelatin injections were used in one case, resulting in a cure

There was no treatment in six cases

Combining these cases with those analyzed in Bedell's paper,[3] we find that the common carotid artery was tied thirty-two times with cure in twelve, or 37 5 per cent, improvement in twelve, or 37 5 per cent, and failure in eight, or 25 per cent

The orbital operation, ligation of the ophthalmic vein, was done in six cases (including the case mentioned by de Schweinitz in discussion), with cure in three, or 50 per cent, improvement in one, or 16 per cent, and failure in two (one fatality), or 33 per cent

Gelatin injections were used in four cases with cure in two, or 50 per cent, improvement in one, or 25 per cent, and failure in one, or 25 per cent

It is to be particularly noted that in this combined series there are thirty-two cases of ligation of the common carotid without a fatality Just how frequently late cerebral softening results, it is difficult to say, but if this complication can be averted, as is claimed, by slow ligation, it would seem that inasmuch as death may result from simple ligation of the ophthalmic vein and that late serious hemorrhage into the orbit necessitating ligation of the carotid artery has occurred, and that finally, in traumatic pulsating exophthalmos the lesion is usually an aneurysm of the internal carotid in the cavernous sinus, the order of surgical procedure indicated is slow ligation of the common carotid, followed by ligation of the ophthalmic vein in those cases in which the primary operation fails to effect a cure

Inasmuch as the results with gelatin injections have been favorable in the few cases in which they have been tried, there can be no objections to their employment if the patient is seen early

1819 Spruce Street.

ABSTRACT OF DISCUSSION

Dr Frank E Burch, St Paul, Minn One is particularly impressed in this report with the freedom from serious trouble following carotid ligation There were no fatalities It would seem that any objections to carotid ligation would be met if preliminary digital or mechanical compression were employed, or if the artery was ligated gradually

In 1910 Dr Charles H Mayo suggested the use of a strip of block tin, which is firm enough to remain set and can be compressed with the fingers In a case of my own, ligation did not cure, and subsequent resection of the ophthalmic vein gave relief to the patient, although vision in the operated eye was lost

In my case, as in one of Dr Zentmayer's, carotid ligation failed to stop the bruit fully and completely, although the subjective and objective symptoms were relieved by each procedure In Krauss' case the uveitis preceded, in mine it followed, ophthalmic ligation It is a fact that the bruit persists in a very considerable proportion of the cases reported, treated either by ligation of the carotid or of the ophthalmic vein I can conceive that preliminary compression of the vein and double ligation without resection might lessen the traumatism and venous stasis and I recommend that this be tried Dr de Schweinitz makes a distinction between arterial aneurysm within the cavernous sinus and arteriovenous aneurysm It is not impossible that some of the reported cases of cure by carotid ligation alone were arterial aneurysms

Dr W H Wilder, Chicago Concerning the first case of the author, it is difficult to understand how a traumatism so slight as that resulting from strain while lifting, could, in a strong healthy young man of 26, bring about a condition such as that believed to cause pulsating exophthalmos, without a previous diseased condition of the walls of the carotid artery It would seem probable that this case belongs to the class of spontaneous exophthalmos Furthermore, the absence of noticeable pulsation in this case would seem to indicate that the cause might have been an aneurysmal dilatation of the carotid artery in the sinus rather than a true arteriovenous aneurysm with rupture of the artery into the sinus In such cases the pulsation may be very slight or entirely absent, as in Dr Zentmayer's first case, although a bruit is obtainable over the orbit and on the side of the head In 1897 I reported three cases of pulsating exophthalmos to the American Ophthalmological Society, one of which, in a man 39 years of age, was spontaneous, and the only etiology that could be determined was syphilis, which he had contracted fifteen years before The presumption was that there was an aneurysm of the carotid in the sinus for pulsation was very distinct Ligation of the carotid was repeatedly refused, as was also digital compression, and antisyphilitic treatment was administered for months with distinct reduction of the swelling At the end of a year he passed from my observation with the condition still present It seems to me important in any case in which there has been very slight traumatism or none at all to determine, if possible, the existence of syphilitic infection, for treatment directed toward this may have its effect, in view of the fact that a number of cases are known to have recovered spontaneously Of the five cases that I have seen and recorded, four were caused by crushing injuries of the skull Three of these were operated on and relieved one by ligation of the right common carotid, followed three months later, because of recurrence, by ligation of the left carotid, one by ligation of the right common carotid, one by ligation of the right common carotid followed nine weeks later, because of return of the bruit, by ligation of the internal carotid of the same side

Dr M H Lebensohn, Chicago Dr Zentmayer would have us believe that ligation of the common carotid is either a very simple or a safe procedure I want to report a fatal case About six years ago a man, aged 39, was kicked in the right eye and developed a pulsating exophthalmos shortly afterward He came to the infirmary four or five days after the injury Slow pressure for two months and medication gave relief at first Ultimately it was decided to operate and Dr Halsted operated, with a fatal result in three days In another case ligation of the common carotid terminated fatally So that it is not so simple or safe as Dr Zentmayer would have us believe

Dr Harold Gifford, Omaha Besides the danger of death from cerebral thrombosis you must also remember the danger of blindness from thrombosis of the retinal vessels I have seen one case in which after ligation for carcinoma of the tonsil the patient became blind in the eye on that side with occlusion of the retinal artery Sometimes we have all these symptoms of pulsating exophthalmos from aneurysmal varix in the neck I had a case some years ago in which a man was knocked down by blows in the neck region, the neck became swollen and black The patient developed symptoms of pulsating exophthalmos which were not so bad that we were tempted to ligate the vessels He established a sort of tolerance for the symptoms and retained them to a certain extent, so far as I know

Dr T B Holloway, Philadelphia I do not think that there is any doubt that cases of true pulsating exophthalmos have occurred spontaneously, and in the majority of these instances it is presupposed that there is some alteration in the artery, either through disease or previous trauma As far as typical pulsating exophthalmos is concerned, I would not regard a case as such in the absence of a subjective or objective bruit Probably the most interesting factor that concerns us at present is the treatment—shall we resort to ligation of the carotid or to the so-called orbital operation? Recently Brazeau, in referring to carotid ligation, stated that the method of slow ligation by the use of the Neff clamp will do away with 50 per cent of deaths in these cases Carotid ligation in pulsating exophthalmos never has and never will give rise to a 50 per cent mortality Ligation may have a mortality of 25 to 40 or even 50 per cent when considered in reference to the various conditions for which this procedure may be done If we take Reuchlin's series of 116 cases and the series of 32 cases reviewed by Dr de Schweinitz and myself, the mortality for these 150 cases is 10 per cent (fifteen deaths) If we include the thirty-two cases of Bedell and Zentmayer, the mortality is but 8 2 per cent for 182 cases If this be compared with Siegrist's mortality of 8 8 per cent for 113 cases, there is a difference of but 6 per cent, so that I feel that the mortality for carotid ligation is pretty definitely established Even in double ligation of the carotid, and there are some ten or eleven cases on record, the mortality among 303 cases was only 20 per cent In our own series we found that the orbital veins had been ligated without fatality eight times The series of six cases quoted by Dr Zentmayer, if added to ours, gives a total of fourteen cases with one death I admit the series is small but the mortality is only 7 1 per cent If we include the other four cases of orbital operation referred to in our series, the mortality is still less, but 5 5 per cent Much is said about the possible cerebral complications that may follow ligation of the orbital vessels Cerebral complications also occur after carotid ligation, and I question whether the statistics are as accurate as those for ligation of the orbital veins As far as we can tell, about 9 per cent of the cases subjected to carotid ligation have been followed by cerebral complications I am free to admit that slow ligation as advocated by Brazeau, Matas and others tends to eliminate certain prominent complications, such as secondary hemorrhage and possibly wound infection In other words, if I had a pulsating exophthalmos today I would possibly want the common carotid ligated by gradual compression I would insist on a ligation of the orbital vein before resorting to ligation of the other carotid On the other hand, it must not be forgotten that in this condition much depends on the extent of the primary injury, the age of the patient, the presence and character of possible associated diseases All are factors when it comes to selective treatment

Dr William Zentmayer, Philadelphia There is no doubt that the case mentioned by Dr Wilder is open to such criticism as he has made That patient was seen before Wassermann tests were made, and the only way we could get the history was by interrogation, which is unsatisfactory in regard to syphilis There may have been syphilitic disease of the artery as the underlying cause I hope I did not leave the impression that ligation is a harmless procedure I said there had been no fatalities in the cases I collected If you will consult the monograph of Drs Holloway and de Schweinitz you will find that there have been many fatalities, but I made the point that by the new method of ligating the carotid this might be avoided I have been asked how this has been accomplished There have been many plans Matas use aluminum plates which are slowly approximated until final occlusion In my own case Dr Stewart used fascia lata, with the expectation that the shrinking of this tissue would bring about slow occlusion of the vessel I believe it was not altogether successful He subsequently reopened the wound and brought about the occlusion more rapidly Another way is by the so-called Neff clamps in which the aluminum clamps are hinged and are gradually approached until occlusion is brought about

SOME TECHNICAL FEATURES OF LAMINECTOMY FOR SPINAL DISEASE AND INJURY

BASED ON ONE HUNDRED AND FIFTY SPINAL OPERATIONS *

CHARLES A ELSBERG, M D

NEW YORK

In our operations for spinal disease or injury, we have used different methods of approach (curved and straight incisions, hemilaminectomy and complete laminectomy) and various instruments, and I have arrived at the conclusion that the complete removal of the spinous processes and laminae is the simplest and most reliable method for the opening of the spinal canal Complicated instruments are unnecessary After the exposure of the spines and laminae by a straight incision and the separation of the muscles, the spines are removed at their bases with large rongeur forceps, and the laminae are bitten away with smaller rongeurs of various sizes and patterns For the exploration of the spinal canal, a defect at least 1 cm in width should be made, so that all sides of the cord can be investigated with the minimum amount of handling of the delicate cord tissues If posterior roots are to be divided, the opening may be somewhat narrower than that for exploration, for decompressive purposes the opening should be at least 1 5 and usually 2 cm in width (Figs 1, 2 and 3)

Our experience has shown us that, unless the cord has been invaded (as in incision of the cord for the extrusion of intramedullary growths) marked exaggeration of the symptoms of a spinal disease should rarely follow a laminectomy The exaggeration of symptoms is usually due to trauma to the cord from too much or too rough manipulation or from hemorrhage into the sac of the arachnoid As our experience in spinal surgery increased, we found that a more than very temporary exaggeration of the symptoms for which the operation was performed became correspondingly less frequent While all parts of the cord are very sensitive, the conus and origin of the nerves of the cauda equina are especially vulnerable, and after operations in this region, disturbances of the bladder and rectum and of the lower extremities are especially apt to occur

DECOMPRESSIVE LAMINECTOMY

The benefits from spinal decompression in nonremovable expanding lesions within the spinal canal (tumors, etc), and in compression of the cord by diseased or dislocated bone, are fully as great as those from cerebral decompression in intracranial disease The opening in the spinal canal should always be a wide one, so as to give plenty of space

When a decompressive laminectomy for old or recent fracture of the spine is performed, the surgeon must be sure to take away a sufficient number of spines and laminae To remove the arches of the fractured or dislocated vertebrae so as to relieve the compressed cord, or to allow the angulated cord to bulge backward, is not enough It is usually necessary to take away one or two arches above and below, so that the dural sac has sufficient room to bend backward in a gradual curve In some cases of spondylitis, in which the intervertebral foramina are diminished in size so that the spinal nerve roots are compressed, it may be necessary to enlarge some of the intervertebral foramina with small rongeurs In one instance I was able, by this procedure, to free several nerve roots from pressure, and thus relieve the patient of a severe root pain

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* From the Surgical Services of the New York Neurological Institute and Mount Sinai Hospital

* Read before the Section on Surgery, General and Abdominal at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June 1916

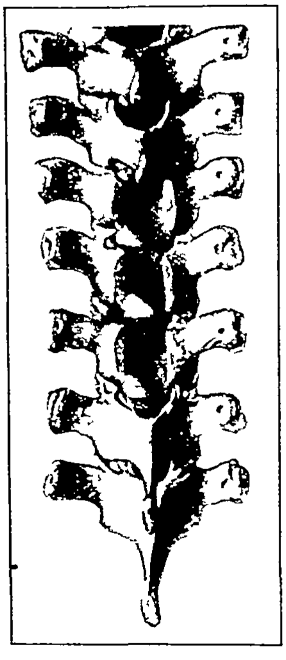

Fig 1 —The amount of bone removed in the operation of laminectomy

It is often advisable to cut a few slips of the dentate ligament at the affected level of the cord, so as to give the cord a greater freedom of movement The division of a number of slips of the dentate ligament near their attachment to the dura does absolutely no harm, and will always allow a backward dislocation of the cord Whenever a disease on the anterior surface of the cord (such as a growth) has to be exposed, the manipulations are made more easy by the division on each side of one or two slips of the dentate ligament When the decompressive laminectomy is performed on account of disease of the dura, it may be necessary to excise a large piece of that membrane This excision may have to extend on both sides down to and into the dural openings Such a wide excision of the dura may be required in cases in which the root pains have been very severe If the disease is confined to the outer surface of the dura, it may be possible to dissect off and excise the thick outer layer of the membrane If this cannot be done, the dura must either be incised and left wide open, or the diseased part is excised If the dura is left open, the cord should be covered by a piece of Cargile membrane, and the muscles and fasciae should be united with extreme care

THE NORMAL AND PATHOLOGIC APPEARANCE OF THE CORD

Considerable experience is necessary before slight abnormalities of the brain tissue can be recognized as such The same difficulties are encountered in spinal disease, in fact, we have as yet a very limited knowledge of the intravitam macroscopic appearance of the spinal cord in a number of its diseases I have made notes of the appearance of the cord and nerve roots in my spinal operations, and shall give an account of some of the pictures observed The surgeon who does much spinal work should not only be able to recognize such gross abnormalities as tumors, pachymeningitis, etc, but he should also understand the finer changes that occur in spinal disease

THE COLOR OF THE SPINAL CORD AND NERVE ROOTS

Normally the spinal cord and nerve roots are of a creamy white color, and the vessels on the posterior surface of the cord are fairly prominent and somewhat tortuous The spinal cord in childhood is slightly more yellow, while in advanced age, its color is a more pure white

While slight individual variations occur, a dead white of the cord is an evidence of medullary atrophy In multiple sclerosis, it is often possible to recognize the location of a sclerotic patch by the whiteness of the cord at the affected level A similar pallor of the tissue can sometimes be observed at or below the level of an old injury of the cord Below an old transverse lesion, the cord is usually of a deeper yellow tint than normally, and I have observed the same yellowish color in transverse myelitis following the puerperium and in pernicious anemia

The white cords are often flat, shrunken and irregular in consistency They are sometimes so thin that they float on the cerebrospinal fluid, and undergo undulatory movements with the respiratory waves of the cerebrospinal fluid

The spinal cord may appear congested in intramedullary disease (myelitis, acute softening), in meningitis, in disease of the dura or arachnoid, below the level of an extramedullary compression, or after a trauma It is very important for the surgeon to have a clear idea of the differences in the appearance of a congested cord due to inflammatory disease and a cord in which the veins are distended following a compression above the level exposed The inflamed or hyperemic cord has a pink color due to the dilatation of all the vessels in the pia-arachnoid When the cord is compressed at some higher level, however (especially in spinal tumors) the return flow in the veins is interfered with, so that the veins stand out prominently as dark, tortuous vessels on the normal white background of the cord This engorgement of the veins has, in a number of exploratory operations, led me to expose more of the cord at a higher level, and I have been enabled to find and remove tumors which would otherwise have been missed In inflammatory diseases, the nerve roots are also congested, and often bluish-red, but below the level of a compression, the nerve roots are normal in appearance

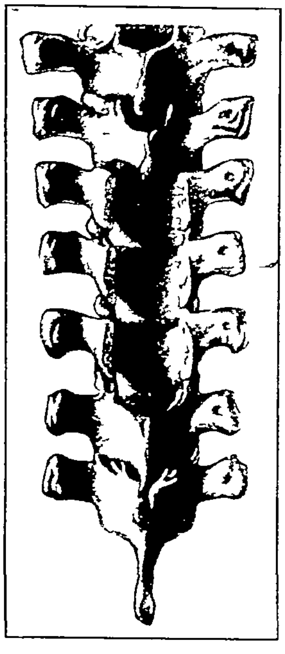

Fig 2 —The amount of bone to be removed in a decompressive laminectomy

If the roots of the cauda equina are exposed soon (within twenty-four hours) after a lumbar puncture has been performed on the patient, it is not unusual to observe that a few of the nerves are reddish-blue The changed roots usually lie near the median line, and the discoloration is probably due to slight injury from the lumbar puncture needle A marked congestion of all the roots of the cauda equina is an evidence of a low grade inflammatory process in the roots This occurs in syphilitic disease of the membranes, and in a disease described by Foster Kennedy and myself and by Oppenheim, which we have described as "neuritis of the cauda equina."

THE INJURY TO THE CORD BY THE PRESSURE OF AN EXTRAMEDULLARY TUMOR, TECHNICAL DETAILS IN THE REMOVAL OF SPINAL CORD TUMORS

The amount of compression of the cord by an extramedullary new growth depends on its duration and size. Large intraspinal tumors are usually much softer than small ones. The larger, softer growths cause a more diffuse pressure on the cord, while in the small hard ones the pressure is more concentrated. This is the explanation for the surprising fact that small tumors (on account of their consistency) are more apt to cause a complete and irremediable transverse lesion of the cord.

The amount of injury done to the spinal cord varies also with the location of the tumor. Tumors under a nerve root or under a slip of the dentate ligament are more apt to cause serious injury than growths on the posterior columns.

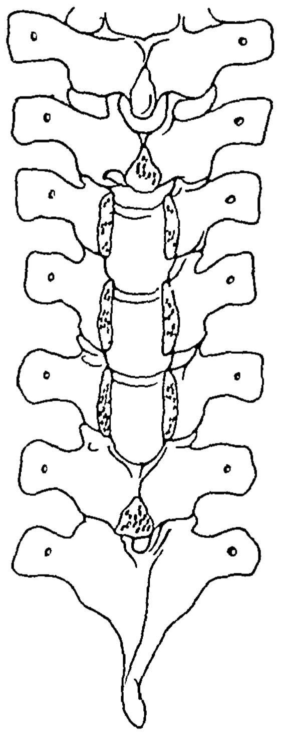

Fig 3 —The amount of bone removed in a laminectomy and the removal of the tips of two spinous processes

If, at an operation, a new growth is found which lies under a nerve root or a slip of the dentate ligament, the root or ligamentous band should be divided before the tumor is removed. It is generally inadvisable to make the attempt to free the growth and to pull it out from underneath these structures, for in the necessary manipulations, injury to the cord is apt to occur.

Properly to expose a spinal cord tumor, the arches of at least three vertebrae must be removed. If this does not completely expose the tumor, additional spines and laminae should be taken away, and the incision in the dura extended. The new growth may be adherent to the pia or may have originated beneath the pia, and serious trauma to the cord might follow if the growth was forcibly drawn out of its bed.

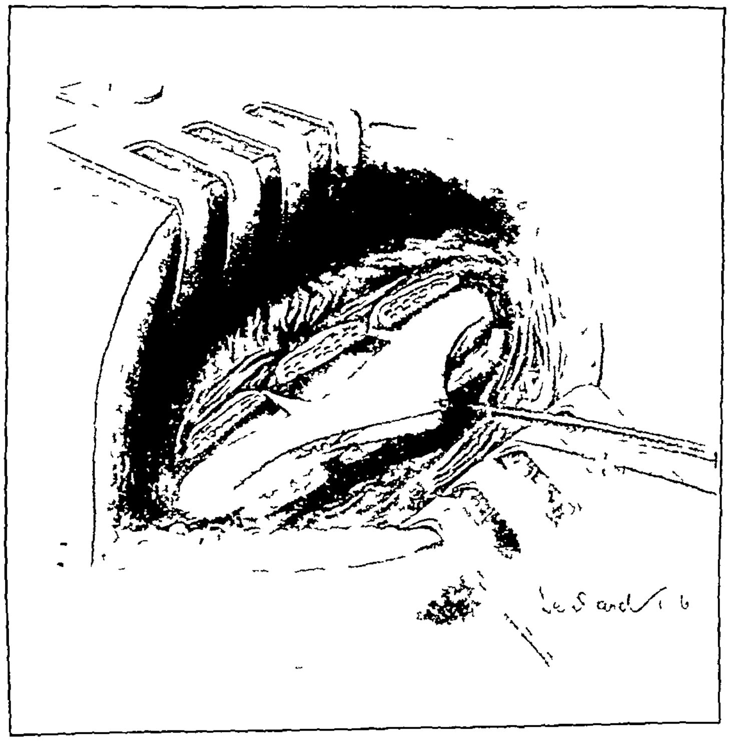

Fig 4 —Method for the exposure of the posterior surface of the bodies of the vertebrae

If the tumor is found to be very adherent to the cord, as occurs especially in subpial growths, it is often advisable to leave a small piece of capsule behind rather than to make the attempt to free the tumor from the cord. Most spinal growths are well encapsulated, grow very slowly, are clinically benign, and have very little tendency to recur. The danger of relapse if a small piece of capsule is left behind is small, and is more than counterbalanced by the lessened danger of injury to the cord. Several patients, in my experience, in whom a small part of the tumor capsule was left behind at the operation, have remained well for many years.

Extramedullary growths on the anterior surface of the cord are rare, I have seen only one among twenty-eight cases. To remove a growth in that location without too much manipulation of the cord requires much dexterity and judgment (Fig 4). If the growth is a small one, the division of a slip of the dentate ligament on one side may be all that is required for the rotation of the cord and the exposure of the growth. If the tumor is larger, however, the laminae on one side should be rongeured away until the approach to the anterior surface of the cord can be made without much dislocation of the cord itself.

THE MORTALITY OF LAMINECTOMY

The accompanying table gives my operative results in 150 spinal operations for disease and injury. The total operative mortality was fifteen, or 10 per cent. If the cases with a fatal outcome are examined, it will be found that in most of them the patients suffered from an irremediable and rapidly advancing disease. Thus, two patients died after an operation for recent fracture of the cervical spine, with complete crushing of the cord, six patients died after periods of from one day to two weeks following an exploratory operation for acute softening, two patients died after an exploratory operation for hopeless sarcomatous disease of the vertebrae, one patient succumbed after an attempt to relieve a streptococcus sepsis due to acute osteomyelitis of the vertebrae. These eleven patients were all beyond the hope of surgical relief, and the operation must be considered only as a contributing cause of the fatality.

The four other deaths occurred in patients in whom life might have been prolonged if no surgical interference had been undertaken. One patient succumbed from respiratory paralysis a few hours after the removal of a high cervical intramedullary growth. She had had respiratory and cardiac disturbances before the operation, and a quadriplegia. The second patient died two days after an exploratory operation for a high cervical intramedullary tumor, which was infiltrating and was continuous with another growth in the posterior cranial fossa. The third patient had a metastatic growth of the ribs after the removal of carcinoma of the colon, and died three days after laminectomy and posterior root section done to relieve a distressing root pain The fourth patient, finally, died from an acute ascending paralysis after the division of the anterolateral tracts for pain

In order to obtain a fair idea of the dangers of a laminectomy in remediable diseases the eleven fatal cases in Group 1 can be fairly excluded as cases of hopeless and surely fatal disease And a scrutiny of the four cases in Group 2 will show that several of the patients suffered from hopeless disease which would of itself have terminated their lives in a short time If the cases of Group 1 were excluded, I should have had 139 operations with four deaths, or a mortality of 2 9 per cent I believe that this is about the mortality that the operation of laminectomy should have in individuals who have not a spinal disease which will be rapidly fatal without operative interference

RESULTS IN ONE HUNDRED AND FIFTY LAMINECTOMIES*

Laminectomy for	Number of Cases	Recovered from Operation	Cured or Almost Cured	Markedly Improved†	Little or no Improvement	Died	Died Within One Year	Total
Spina bifida occulta	2	2		2				2
Abnormal spinal vessels	5	5	2	3				5
Recent fracture of spine	3	1		1		2		3
Old fracture of spine	7	7	3	4				7
Tumor extradural removed	3	3	2	1				3
Tumor extramedullary removed	16	16	12	4				16
Tumor intramedullary removed	9	8	2	4	2	1		9
Tumor intramedullary not removed	8	7		2	5	1	3	8
Tumor of conus and cauda	5	5		3	2		2	5
Tumor multiple sarcoma	1	1			1		1	1
Tumor sarcoma of vertebrae	6	4		2	2	2	2	6
Tumor metastatic	2	2			2		2	2
Aneurysm of spinal vessels	1	1			1			1
Exploration	15	15		5	7		3	15
Exploration acute softening	6					6		6
Syringomyelia hematomyelia	4	4		2	2			4
Neuritis of cauda equina	6	6	3	3				6
Pachymeningitis	4	4	1	3				4
Acute osteomyelitis	2	1	1			1		2
Ostearthritis	1	1	1					1
Spinal decompression	17	17	3	9	5			17
Spinal decompression meningomyelitis	3	3		2	1			3
Division of posterior roots	22	21		15	5	1	3	22
Division of anterolateral tracts	2	1		1		1	1	2
Totals	150	135	30	66	35	15	17	150

* There were in addition ten secondary laminectomies

† Many of these patients have recovered entirely

Madison Avenue and Sixty-Third Street

ABSTRACT OF DISCUSSION

Dr E Sachs, St Louis The approach to the anterior surface of the spinal cord has always been a difficult problem on account of the important factor that one must not handle central nervous tissue any more than necessary and putting in the retractor to draw the cord to one side is a very dangerous procedure Dr Elsberg has pointed out that the different circulatory disturbances apparent as soon as the cord is exposed are of great diagnostic value in determining the character of the pathologic lesion I am inclined to differ from him in one point, that is, that the congestion of the veins when the dura is opened is an evidence of a lesion higher up The mere opening of the dura and changing the intraspinal pressure is sufficient to produce congestion of the veins Dr Elsberg emphasized also the importance of a dry field Nothing gives more postoperative trouble after laminectomy than allowing blood to get into the spinal canal It has been my practice never to open the dura until the field is entirely dry Then, in order to prevent any blood from getting in from the muscles on either side I make use of Frazier's method, putting in sponges on either side to exclude the muscles as well as the skin from the operative field so that nothing is exposed except the dura and the cord I have never found it necessary to use a suction apparatus such as Dr Elsberg illustrates No doubt it might be of very great value After the incision has reached the spinous processes he makes an incision through the muscles That is the cause of considerable hemorrhage I try never to cut the muscles and stick closely to the bone and peel back the periosteum, starting at the tips of the spinous processes In that way you can get a very much drier field His point about taking off a large amount of bone and a great many spinous processes, if necessary, I endorse heartily As he said, the spinous processes in no way support the spinal column and five or six or seven spinous processes can be removed with impunity and the mobility of the back be as good as prior to that time The method of hemilaminectomy, which Dr Taylor of New York has used so extensively, has not been of any advantage in my hands His emphasis of cutting the posterior roots in order to get more exposure for a tumor rather than trying to get a tumor out through a narrow opening is a method that should be used whenever necessary Any method that will avoid trauma to the nervous tissue is to be recommended even though you may produce a small zone of anesthesia after cutting a posterior root

Dr Charles Albert Elsberg, New York After the tips of the spines have been exposed, I formerly used the periosteal elevators to separate the periosteum from the spinous processes but found that one did much more injury to the muscles than if they were separated by cutting close to the spines With reference to congestion of the veins when the spinal cord is exposed It is very true that within fifteen or twenty minutes, if the cord is exposed for that length of time, there is a reflex enlargement of the spinal veins, but the appearance in the conditions I demonstrated is entirely different The moment one sees these large veins they mean obstruction to the return venous flow and compression of the cord above the level exposed I am quite sure this enlargement is not reflex, it is a real pathologic condition which has significance and which has in a number of instances led us to look for and remove tumors which otherwise would not have been found

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Fly Extermination—Hodge (1910) has approached the problem of fly extermination from another viewpoint He believes that it is practical to trap flies out of doors during the preoviposition period, when they are sexually immature, and to destroy such numbers of them that the comparatively few which survive will not be able to lay eggs in sufficient numbers to make the next generation a nuisance To the end of capturing them in enormous numbers he has devised traps to be fitted over garbage cans, into stable windows, and connected with the kitchen window screens Under some conditions this method of attack has proved very satisfactory

One of the most important measures for preventing the spread of disease by flies is the abolition of the common box privy In villages and rural districts this is today almost the only type to be found It is the chief factor in the spread of typhoid and other intestinal diseases, as well as intestinal parasites Open and exposed to myriads of flies which not only breed there but which feed on the excrement, they furnish ideal conditions for spreading contamination Even where efforts are made to cover the contents with dust or ashes or lime, flies may continue to breed unchecked Stiles and Gardner have shown that house-flies buried in a screened standpipe forty-eight inches under sterile sand came to the surface—Riley and Johannsen

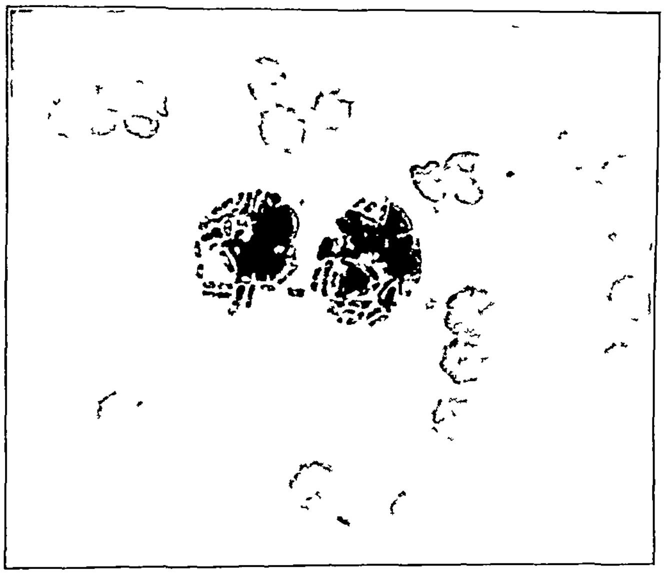
SOME BODILY CHANGES DURING ANESTHESIA

AN EXPERIMENTAL STUDY *

FRANK C MANN, M D
ROCHESTER, MINN

In studying the bodily changes due to an anesthetic or occurring during the anesthetized state, it is necessary to differentiate carefully the effect of associated conditions The preliminary excitement, struggling, asphyxia and other accompaning phenomena produce changes quite apart from the anesthetic itself The compensating physiologic mechanism necessary in light anesthesia is probably not the same as when a deep anesthetized state is produced A short or long period of anesthesia may differ only in degree, provided the anesthetic tension remains the same

The present investigation deals mainly with a study of the blood of dogs under ether anesthesia While the associated conditions, as asphyxia, etc, were also included in the study, in general only the results obtained while the animal was under surgical anesthesia will be emphasized



Photomicrograph of two phagocytes containing bacteria (Experiment 89) These cells had been subjected to five and one half hours' etherization

The blood is the carrier of the anesthetic substance in every method of general anesthesia, and it is important to know definitely how it is affected by each anesthetic either directly or indirectly This knowledge is of especial value in view of the fact that today more patients than ever before are being operated on under general anesthesia who have a lower hemoglobin content and more pathologic changes of other kinds

While in the experiments herein reported the methods of etherizing differed, depending on the condition desired, the general procedure consisted in a preliminary etherization in a closed cabinet until the animal was completely relaxed, followed by the employment of the auto-inhalation method[1] The latter consists in intubating in the same manner as for intratracheal insufflation The intubation tube is connected through a valve tube with a double perforated ether can, which allows of a limited amount of rebreathing With little effort, constant anesthesia can be maintained in this manner for long periods

It was important to determine first whether the amount of circulating blood was diminished This was estimated according to a method described in a previous publication,[2] which consisted in bleeding the animal from the femoral artery and from the right heart and then comparing the amount of blood obtained with the total amount present in the body, estimated on the basis of 7 7 per cent of the body weight While this method gives only comparative results, it is accurate enough, when carefully controlled, to show gross changes In a series of six normal animals which were bled immediately after being etherized, I was able to obtain an average of 76 per cent of the estimated amount of blood In a series of six animals which were bled after from six to nine hours of light etherization, only 64 per cent of the estimated amount of blood was obtained The decrease in the amount of circulatory fluid would probably have been much greater if deep anesthesia had been employed The result is due undoubtedly to loss of muscle tone and venous stagnation, as explained by Gatch[3]

The lipoids of the tissues seem to have the greatest affinity for the most common anesthetic substance Of these lipoids, lecithin and cholesterin are the most important The dissolving power of ether and chloroform for these two lipoids has formed the basis for the best known theory of anesthesia As it has been shown that lecithin is greatly increased in the blood during anesthesia,[4] it was desirable to know whether the cholesterin content of the blood also underwent changes Accordingly, determinations of the cholesterin value of the blood were made in one series of experiments The method employed was that described by Bloor[5] The cholesterin was estimated just before anesthesia, immediately after a stage of prolonged excitement, and then at different intervals after etherization In active dogs the cholesterin content of the blood does not seem to undergo any great changes during a period of time equal to that for which our dogs were kept under anesthesia In the anesthetized dogs it was found to change considerably, but the variations were not uniform enough to permit definite conclusions In general, it seems that the cholesterin value increases during excitement, decreases below normal after an hour or so of anesthesia, and then gradually increases above normal on further etherization (Experiment 62)

Previous investigation has shown that the viscosity and specific gravity of the blood remain the same under light anesthesia, but both increase when the animal is deeply anesthetized[6] In several of these experiments the specific gravity was estimated by both the Hammerschlag and the Roy Jones methods, and the foregoing results were corroborated Under light ether anesthesia the specific gravity of the blood does not change even though the etherization is maintained for as long a period as ten hours However, when the animal is deeply etherized and respiration becomes

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* From the Mayo Clinic

* Read before the American Association of Anesthetists, Detroit, June 12, 1916

[1] McGrath, B F Anesthesia in Surgical Research, Surg, Gynec and Obst, 1914, xviii, 765

[2] Mann, F C Shock and Hemorrhage, an Experimental Study, Surg, Gynec and Obst, 1915, xxi, 430

[3] Gatch, W D The Effect of Laparotomy Upon the Circulation Tr Am Gynec Soc, 1914, xxxix, 180, Am Jour Obst 1914, lxx, 55

[4] Reicher, quoted by Hewitt, F W Anesthetics, London, The Macmillan Company, 1912, p 82

[5] Bloor, W R Studies on Blood Fat II Fat Absorption and the Blood Lipoids, Jour Biol Chem, 1915, xxiii 317

[6] Burton Opitz R The Changes in the Viscosity of the Blood During Narcosis, Jour Physiol, 1905 xxxii, 385

shallow the specific gravity increases a few points in the fourth decimal, probably because of the asphyxia

As ether and chloroform lake the blood, it has been thought that these anesthetics might have a deleterious effect on the red cells and hemoglobin This possibility was tested in several experiments A blood count and hemoglobin estimation were made before anesthesia and at different intervals after etherization The ordinary hemocytometer and a Dare hemoglobinometer were used As a rule, neither the hemoglobin nor the number of red cells underwent changes greater than the coefficient of error, even after ten hours' etherization In some of the experiments there was an increase in both, but it was slight In a few experiments the resistance of the red cells before and after etherization was determined by the fragility test of Ribierre[7] No change in the resistance of the erythrocytes to hyposmotic salt solution was noted

Leukocytosis occurs in a dog under ether anesthesia, provided the anesthetic is maintained long enough Occasionally the white cells increase in number within the first hour of anesthesia, but frequently not until after four hours The increase may be very slight, in some animals not above the coefficient of error, but usually by the end of the fourth hour of anesthesia the number of white cells has doubled The leukocytosis is not always progressive Frequently a maximum number is reached which more prolonged etherization does not change Sometimes there has been a decrease before the end of anesthesia Usually, however, the number of white cells does not begin to decrease for a few hours after the animal has recovered from the anesthetic, and is still above normal twenty-four hours after etherization (Table 1)

The leukocytosis just described is practically a constant and general phenomenon It is not limited to the peripheral circulation, for the white counts are usually the same in the blood from ear veins, femoral veins and mesenteric veins (Experiments 54 and 80) This fact, that the white cells are increased in the blood in widely separated parts of the body, also eliminated the possibility that stagnation to dependent parts or reaction to external irritation were factors Such leukocytosis occurs in animals in which a moderate leukocytosis is present already (Experiment 91) It resembles a leukocytosis of digestion All of our experiments, however, were performed on dogs that had not had food from twelve to twenty-four hours It differs from the leukocytosis produced by drugs, such as pilocarpin, in the fact that it is not a lymphocytosis and atropin does not prevent its occurrence (Experiment 77)

The spleen is not an important factor in its production, for it occurs also in animals that have been splenectomized Its cause and site of action have not been definitely determined, but it would appear that it is a direct stimulation of the bone marrow

Differential counts of the blood before and after ether show that there may be an actual increase in all of the forms of white cells, but that the polymorphonuclear cells are usually the only form showing also a relative increase In only one experiment was a relative decrease of polymorphonuclear cells noted The large lymphocytes usually decrease relatively, while the small lymphocytes always decrease The transitional cells usually show an increase In one experiment the eosinophils increased greatly The size and character of all the cells remain normal (Table 2)

TABLE 1—CHANGES IN THE NUMBER OF WHITE BLOOD CELLS UNDER ETHER AT DIFFERENT HOURS AFTER ANESTHESIA

No of Exp	Normal Count	First Half Hour	First Hour	Second Hour	Third Hour	Fourth Hour	Fifth Hour	Sixth Hour	Seventh Hour	Eighth Hour	Ninth Hour
51		18 400			19 100			27 200			39 300
52		10 920			14 470			14 5 0			15 400
53		15 960			13 4 0			18 340			18 870
54		13 200			14 400			29 900			29 900
60	7 000		8 100				15 000	15,800			
61	10 400	18 400		20 250			39 900				
69	12 150	13 700					24 000			19 000	
70	21 450	25 000						32 750			
71	20 600					23 450					
72	33 850	44 550							50 450		
73	19,800						39 400		46 100		
74	13 900	13 950				36 400			51 300		
75a	20 000	24 800		30 750	35 000			28 330			
75b	8 000		10 000	14 000	17 000	23,830	25 230	25 000	27 000	29 000	
76	14 900	18 700	20 000	26 900	27 900	67 920	29 300	30 000			
77	18 050		18 450	20 000	24 800	28 650	30 500		35 800		
78	21 450		33 650	35 400	44 100	45 000	45 000			40 000	
79	14 000		17 750	21 650	23 850	25 000	21 180	23 050			
81	12 000	18 000	19 250	18 000	21 650	23 300		24 580			
82	26 000				35 000			39 000			
83	25 000				30 000						
85	18 500				20 100					27 100	
86	12 000						19 452				
87	17 000						19 000				
88	16 100						25 400				
89	15 100				30 500			47 450			
90	11,800						19 000				
91	21 000							40 100			

Studies on phagocytosis have demonstrated that the phagocyte reacts to anesthetics in a manner similar to other unicellular organisms Fat-dissolving substances, such as ether and chloroform, in weak solutions, stimulate phagocytic activity until a certain optimum strength of solution is reached Any increase in the amount of anesthetic substance above this produces a decrease in phagocytosis and finally a paralysis of the cells[8]

In previous studies, the white cells have usually been subjected to artificial environment They were separated from the blood, suspended in salt solution and, after the addition of the substance with which they were to be tested, such as carbon particles, were incubated for definite periods of time

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[7] Ribierre P L hémolyse et la mesure de la résistance globulaire application à l étude de la résistance globulaire dans l ictère Thèse de Paris 1903 quoted by Sahli H Diagnostic Methods Philadelphia W B Saunders 1911 p 769

[8] Hamburger H J Researches on Phagocytosis Brit Med Jour 1916 i 37

It was deemed of value to determine whether phagocytic activity was altered when the cells were subjected to concentration of the ether such as occurs in the blood under surgical anesthesia In order to make conditions as nearly normal as possible, the following method was employed Under local anesthesia one of the jugular veins was exposed, dissected entirely free from surrounding fascia and doubly ligated, a section about 10 cm long being left between ligatures partially distended with blood A suspension of *Bacillus coli* in salt solution was injected into this natural incubation tube, and after it was thoroughly mixed by rolling gently between the fingers, the skin was closed over the vessel Under these conditions the blood does not coagulate, the phagocyte remains in its normal medium at approximately its normal temperature, and has access to the bacteria in approximately the natural way After various intervals of time, an hour being found the most suitable, smears were made from the enclosed blood Care was taken that the blood was thoroughly mixed before the smears were made These slides were used as controls After definite intervals of etherization, the process was repeated on the other jugular vein with exactly the same technic The cells in the latter vein had been subjected for several hours to a concentration of ether strong enough to maintain the animal under surgical anesthesia

TABLE 2—CHANGES OCCURRING IN THE DIFFERENTIAL BLOOD COUNT BEFORE AND AFTER LONG PERIODS OF ANESTHESIA

Cells	Experiment 75		Experiment 76		Experiment 77		Experiment 79		Experiment 81		Experiment 89	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Polymorphonuclears	64	86	76	81	78	89	66	86	79	90	76	93
Large lymphocytes	13	5	9	6	6	3	6	6	6	5	10	3
Small lymphocytes	17	2	10	7	7	2	20	2	7	0	5	1
Transitionals	3	6	5	6	6	5	1	3	2	3	4	2
Eosinophils	3	1	0	0	3	1	7	3	6	2	5	1

The blood smears were stained, and a count of the phagocytes containing bacteria and the phagocytes without bacteria was made Usually 200 white cells were counted on a slide, and frequently counts were made on several slides from one vein The average was taken as the final result Only the polymorphonuclear cells were included in this count The occasional large lymphocyte or eosinophil containing bacteria was ignored It is obvious that there are chances for error in the method, but I do not believe the average error exceeds 10 per cent

TABLE 3—PHAGOCYTOSIS BEFORE AND AFTER ETHERIZATION

Exp No	Normal Count W B C	Count of W B C at Time Bacteria Were Injected After Etherization	Percentage of Cells of Normal Blood Containing Bacteria	Percentage of Cells of Etherized Blood Containing Bacteria	Number of Hours Etherized
87	17,000	19,000	73 5	87	5
88	16,100	25,400	21	36 5	5
89	15,100	47,450	45 5	57 5	5½
90	11,800	19 000	50	50	5
91	21,000	40 100	90	90	6

The results show that phagocytes which have been subjected for from four to six hours to a concentration of ether which is capable of maintaining a dog under surgical anesthesia do not exhibit any marked changes in activity In most of these experiments the greater number of cells containing bacteria was found in the blood subjected to the ether, but the increase was not sufficient to be of positive significance It can be definitely stated, however, that there was no decrease in the phagocytic power of the cells in the blood subjected to etherization (Table 3 and illustration)

TABLE 4—FINDINGS IN EXPERIMENT 54

	Red Blood Cells	White Blood Cells	Specific Gravity	Hemoglobin	Blood Pressure
Blood taken from peripheral veins					
Immediately after etherization	5,775,000	13,000	41	70	105
Three hours after etherization	5,437 000	14,400	41		80
Six hours after etherization	5 675 000	29,900	41		75
Nine hours after etherization	6,020,000	29,900	42	71	60
Blood taken from portal circulation					
Nine hours after etherization	6,030 000	25,700	42	72	

SUMMARY

A study of the blood of dogs subjected to etherization demonstrated the following facts The amount of circulatory blood is diminished about 10 per cent after from six to nine hours of light etherization There are variations in the cholesterin values, but the changes are not uniform The specific gravity does not change under light etherization, and under deep anesthesia increases only as asphyxia becomes a factor The number of red corpuscles, the amount of hemoglobin, and the fragility of the red cells do not change There is always a leukocytosis in ether anesthesia The degree of leukocytosis varies from a very slight increase in the number of cells to more than double the normal number The increase is usually present after from three to four hours of etherization, and is due mainly to cells of the polymorphonuclear form The leukocytosis is not dependent on the spleen and is not prevented by atropin It is probably the result of a direct action on the bone marrow Phagocytic action is certainly not depressed by an etherization period of from five to six hours

The following experiments are presented as typical of the series they represent

Experiment 54—July 27, 1915, a young adult female terrier, weighing 5 kg, at 7 55 a m was etherized and blood data were taken immediately The apparatus was arranged to record the carotid blood pressure

Experiment 62—Feb 19, 1916, female bull terrier in excellent health, weight 17 6 kg

8 20 a m Blood withdrawn from left jugular vein for cholesterin estimation Animal very quiet Cholesterin value, 0 266

8 21 a m Animal placed in etherizing cabinet and etherized very slowly

8 50 a m Animal intubated

8 52 a m Blood withdrawn, cholesterin value 0 312 Animal kept under surgical anesthesia

9 55 a m Blood withdrawn Cholesterin value, 0 180

Animal maintained under anesthesia until 3 p m when, after another test was taken, it was allowed to recover

3 p m Blood withdrawn, cholesterin value, 0 358

Experiment 77—April 1, 1916, male mongrel, animal very quiet, weight 15 1 kg

8 a m Animal was given ⅙ grain morphin and 1/100 grain atropin subcutaneously

8 30 a m Count of white blood cells was taken

8 45 a m Etherized quickly by Cone method Animal maintained under surgical anesthesia until 4 p m, when it was allowed to recover

The counts of white blood cells were as follows

8 30 a m, 18,050
10 00 a m, 18 450
11 00 a m, 20,000
12 00 m 24,800
1 00 p m, 28,650
2 00 p m, 30,500
4 00 p m, 35,800

Experiment 89—May 3, 1916, adult mongrel, male, weight 9 kg

8 15 a m Count of white blood cells taken from right ear vein and smears for differential count Right jugular vein exposed under local anesthesia Doubly ligated vein leaving it almost filled with blood Length of vein, 8 cm Total white cells, 15,100 Differential count polymorphonuclears, 76, large lymphocytes, 10, small lymphocytes, 5, transitionals, 4, eosinophils, 5

8 30 a m Injected 1 c c suspension of *Bacillus coli* into vein Vein markedly distended Gently mixed by compression

9 a m Animal etherized

9 30 a m Smears taken from right jugular vein showed that 45 5 per cent of the phagocytes contained bacteria and 54 5 per cent did not contain bacteria

11 30 a m Took count of white blood cells from right ear vein, count 30,500

2 25 p m Took count of white blood cells and smears for differential count from abdominal vein Total count of white cells from abdominal vein, 47,430 Differential count polymorphonuclears, 93, large lymphocytes, 3, small lymphocytes, 1, transitionals, 2, eosinophils, 1

2 30 p m Exposed and ligated left jugular vein Injected 1 c c of same suspension of *Bacillus coli* Technic same as used on right vein

3 p m Count of white blood cells from mesenteric vein, 46,650

3 30 p m Smears made from blood of left jugular vein showed that 57 5 per cent of the phagocytes contained bacteria and 42 5 per cent did not.

Experiment 91—May 11, 1916, young male, mongrel, had had distemper for about four days, weight 8 5 kg

8 20 a m Exposed left jugular vein

8 44 a m White blood cells, 21,000

8 45 a m Injected suspension *Bacillus coli* into ligated vein

9 a m Animal under ether

9 45 a m Made smears from left vein Of the phagocytes 90 per cent contained bacteria

Animal maintained under surgical anesthesia

3 p m Exposed right jugular vein and injected bacteria

3 02 p m Count of white blood cells, 40,100

4 p m Made smears from right vein Ninety per cent of the phagocytes contained bacteria

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Speech Following Explosions—After explosions it has been found that in some of the survivors speech is affected In some instances speech is entirely lost, and only comes back after many days In others there is great difficulty in forming the words, and as the patient's mind generally is slow and confused there is a curious impression given to the observer of great effort in the attempts to speak. The patient often repeats himself, iterating and reiterating words or phrases This affection of speech may and generally does last only for a few days but in rarer cases it may be months before speech returns to normal—Glaister

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NITROUS OXID-OXYGEN ANESTHESIA IN MAJOR SURGERY*

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To avoid misunderstanding, let me state at the outset that this paper is written from the point of view of the operator, not the anesthetist No claim is made to special knowledge concerning the theory and technic of general anesthesia or the abstract merits of the several anesthetic agents, and no academic discussion along these lines will be attempted My sole purpose is to present conclusions based on personal experience in operating under nitrous oxid-oxygen anesthesia, and to indicate some of the practical advantages it has seemed to afford in the field of major surgery

It is fair to say at this point that no opinion as to the comparative value of anesthetics and methods of anesthesia is entitled to weight unless it is founded on the actual clinical experience of a competent and strictly impartial observer Mere impressions are apt to be misleading, conjecture with reference to any scientific problem is always worse than useless Desire to know the truth is the first essential This established, the conditions of the investigation are quite certain to be safeguarded, and the final verdict to be a just one

During the past three years I have performed approximately 300 major operations under nitrous oxid-oxygen anesthesia Without stopping to enumerate them in detail, I may say that the list includes thyroidectomy, prostatectomy, the several procedures requiring preliminary dilatation of the sphincter ani, and excision of the rectum, as well as the various operations on the abdominal and pelvic viscera In the great majority of these cases (certainly not less than 90 per cent) not a drop of any other general anesthetic was used, though in practically all cases I employed local anesthesia in addition I approve and advocate the addition of ether when it is indicated, in amount sufficient to secure the result desired, but from clinical observation I am of the opinion that, where this is necessary, it is because of some fault in the preparation of the patient, or, more rarely, due to some extraordinary complication of the operation itself In such cases the amount of ether required is usually very small, not exceeding 1 or 2 drams as a rule, and a second occasion for its use rarely arises in the same operation

In this connection it should be emphasized that local anesthesia is a most valuable adjunct to the successful employment of gas anesthesia This is particularly true in abdominal cases in which muscular relaxation must be had to avoid undue traumatism Here the result desired is readily accomplished by carefully infiltrating the nerve-bearing tissue of the abdominal wall with a weak solution of novocain (1 400) or cocain (1 1,000) The degree of relaxation secured is a true index to the thoroughness of the local infiltration

The operative time in the 300 cases referred to varied from thirty minutes to two hours, averaging probably about one hour I have not found it necessary in any case to suspend the work because the anesthetic was not well borne In fact, as my confidence in the gas-oxygen method and in my anesthetist has increased, I have come to look with less and less anxiety on cases that heretofore seemed most formidable, and to find myself willing to offer the aid of surgery to patients whom I should formerly have advised against operation

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* Read before the Section on Surgery General and Abdominal at the Sixty Seventh Annual Session of the American Medical Association, Detroit June 1916

In the entire series there was no fatality in any way chargeable to the anesthetic Further, there was not an instance in which danger from this source even threatened a patient Dr R F Hastreiter, who has administered the gas most often for me, tells me that he has now administered it for surgical anesthesia more than 500 times without a fatality and without unfavorable symptoms in a single case

DISADVANTAGES

There are certain inherent difficulties and disadvantages in the use of nitrous oxid The first and most important of these is the difficulty of finding anesthetists skilled in its administration The prevalent idea that anybody, including student and nurse, can give the anesthetic emphatically does not apply to this agent On the contrary, rare judgment and much experience are required for its safe and successful employment Happily this difficulty is not insuperable, since competent men are taking up the work in every community as the demand for gas anesthesia increases

Another disadvantage is the more or less cumbersome character of the apparatus required The ingenuity of the manufacturers has done much to overcome this difficulty, simplified outfits, both hospital and portable, being now provided which, if given proper care, are quite satisfactory Where one is so fortunate as to be able to concentrate all his work in a single perfectly equipped hospital, this disadvantage is readily eliminated

A third disadvantage is the relatively high cost of the gas This has been greatly reduced by the improved methods of manufacture and handling, and to an equal or greater extent by improved methods of administration Strictly speaking, the matter of cost does not enter into the question The real consideration concerns only the best interests of the patient

One other difficulty should be mentioned, namely, that of securing nitrous oxid entirely free from impurities When nitrous oxid first came into use as a general anesthetic, it was thought that a certain amount of cyanosis was necessary and inevitable in every case We now understand that this condition is to be regarded as a danger signal, due for the most part to poisonous impurities in the gas, though it is, of course, true that the same effect may be produced by the unskilled anesthetist with gas of the purest quality The valuable paper of Warner,[1] describing the experience of Lakeside Hospital, clearly establishes the facts that it is perfectly practicable to produce pure gas, and that with the impurities the dangers of this agent as an anesthetic virtually disappear His observation that entire freedom from cyanosis may be maintained, while the patient is otherwise presenting symptoms of asphyxia, is deserving of special note

LIMITATIONS

The applicability of nitrous oxid as an anesthetic embraces the entire field of surgery, so far as my experience goes, with a single exception It is not satisfactory in major operations on the mouth, nose and air passages To maintain surgical anesthesia with this agent requires the complete exclusion of atmospheric air, and the effect is so evanescent that the mask cannot be removed even momentarily without the patient's arousing Breathing tubes have been devised to overcome this difficulty, but with only partial success In such cases the anesthesia may be induced by the gas and ether substituted before the operation proper is begun, the patient thus escaping the primary stage of irritation and excitement With this exception I know of no limitations in the practical application of this method of anesthesia

ADVANTAGES

The advantages of nitrous oxid are numerous and may well be considered under two heads first, those which concern the patient, and second, those which concern more particularly the operator and the hospital

The two most important considerations from the standpoint of the patient are, of course, safety and comfort Given a pure gas and a competent anesthetist, I am fully convinced that nitrous oxid is at least equally as safe as ether and, when the possibility of postoperative complications attributable to the anesthetic is included, more so No one will gainsay that no such marked depression is observed following the former as the latter In explanation of this fact we have only to remember that ether lowers the blood pressure while nitrous oxid raises it, that free perspiration and the consequent dissipation of the body heat is the rule under ether, while such a phenomenon is rarely observed under nitrous oxid, that the effects of ether are persistent, lasting usually for twenty-four hours or longer, while the effects of nitrous oxid are by comparison decidedly transient We further know that ether is one of the best of all lipoid solvents and that, being so diffusible, it permeates practically every fat-bearing tissue of the body, necessitating increased elimination at a time when the patient's organs are least able to respond Postoperative pneumonia and suppression of urine following ether anesthesia are by no means rare It will probably never be definitely known just how often the lighting up of a latent tuberculous process or the inception of an ultimately fatal nephritis may be due to the same cause

Many factors contribute to the comfort of the patient under nitrous oxid-oxygen anesthesia Any fair-minded observer who will study and contrast the condition of the patient before, during and after the operation in two similar cases, or series of cases, in which gas and ether respectively are administered by equally competent anesthetists, cannot fail to be impressed with the comparative merits of the former in this regard The disagreeable effects of ether anesthesia are common knowledge, and inspire no small part of the dread with which surgery is contemplated With the proper assurance in advance, the patient approaches nitrous oxid anesthesia in a much more tranquil frame of mind — unquestionably a distinct gain Nitrous oxid is nonodorous, nonirritating, and produces unconsciousness with the first few inhalations No sensation of strangling, no talking or struggling, no nausea result When the flow of gas is stopped, full consciousness is regained in a very few moments, and nausea and vomiting are chiefly notable for their rarity of occurrence In the exceptional case in which emesis is seen, it is more in the nature of a simple regurgitation, usually occurs only once, and is not accompanied by the deathly nausea and depression which result so commonly from ether With respect to the several bodily functions, the normal is regained with striking rapidity This is a matter of hours, not days, and convalescence from the operation, not from the operation plus the anesthesia, is much more promptly established, of shorter duration, and more comfortable in every way

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[1] Warner, A R Manufacture and Administration of Nitrous Oxid for Anesthesia, The Journal A M A, Dec 4, 1915, p 1973

The gentleness of manipulation required, in operating under nitrous oxid, I regard as one of its most pronounced advantages The anesthesia produced by this agent is never so deep and deathlike as that of ether To operate successfully under nitrous oxid demands a studied respect for all tissues at every stage By this means unnecessary traumatism is avoided, the amount of postoperative wound repair lessened, and the vitality of the patient conserved The surgeon who regards the spectacular and his time record of supreme importance cannot hope to find this method of anesthesia entirely satisfactory

I am convinced that nitrous oxid very appreciably broadens the field of surgery in that it makes it possible to extend its benefits to certain cases and conditions in which the administration of ether would involve too great danger It is no small thing to be able to assure a weakened and suffering patient that he may have the chance of relief to which he is entitled without assuming undue risk from the anesthetic itself Several times within my own experience, patients have been successfully operated on when, with ether as the dependence, I should have approached the cases with the utmost reluctance and apprehension, if, indeed, I could have persuaded myself to undertake them at all

From the standpoint of the operator and the hospital there are several additional advantages in nitrous oxid anesthesia which, while of secondary importance, to be sure, are yet worthy of being mentioned There is a considerable saving of time in the operating room because of the rapidity with which the gas acts and because, when the operation is over, the patient, conscious and quiet, may be returned to his bed without the usual delay The few minutes thus saved in handling a single case might easily swell into an hour or more in the course of a busy day — an item of no little moment both to surgeon and operating-room force

A further very decided advantage to the hospital develops in the postoperative care of gas patients The time of every hospital employee has a definite money value After ether anesthesia the more or less constant attention of a nurse is usually required for a period varying from a few hours to twenty-four hours or more, depending on the amount of depression and the persistence of nausea and vomiting This costs money The use of gas does away with the need for so-called recovery rooms, the patient, conscious and comfortable, being returned directly to his own bed in a ward or room Thus the disturbance of other inmates is minimized and the natural apprehension of other patients approaching the ordeal of operation allayed, instead of increased

CONCLUSION

There is no topic before the profession today commanding greater interest than that of anesthesia, and rightly so, for it is universally recognized that further progress in surgery is dependent in no small degree on advances along this line

The ideal anesthetic for major surgery is the one capable of producing analgesia and unconsciousness without danger or discomfort to the patient Any agent or method which furthers this ideal — which tends in any way to relieve surgery of its harshness, and to smooth down the rough places on a road to health that patients justly regard as both formidable and forbidding, should receive our most earnest and open-minded attention My experience with nitrous oxid as an anesthetic would seem to warrant the conclusion that it is entitled to high rank in this beneficent class

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ABSTRACT OF DISCUSSION

Dr W I Terry, San Francisco I am in full accord with Dr Cooke's conclusions as to the use of nitrous oxid and oxygen in major surgery I have used this method consistently for the past four years in about 1,200 major cases and I am convinced that from the standpoint of the patient himself it is the best and safest anesthetic we have, when supplemented by local anesthesia The absence of odor, the rapidity of action, the minimized after-effects are all for the comfort of the patient The absence of heart, kidney, liver, blood and lung conditions postoperatively are the factors of safety which do not apply to the same degree with other general anesthetics It seems to me that there are two principal reasons why the method has not had a very extended use First, the lack of thoroughly trained anesthetists, and second, the increased cost Both these factors will prevail against it until they can be modified and ether will still remain the method of choice where nitrous oxid and oxygen are not obtainable under the right conditions Another objection that has frequently been made is the lack of muscular relaxation, particularly in abdominal work This, to me, is simply a matter of technic in the use of the local anesthetic When the local anesthetic is employed properly muscular relaxation is obtained, provided always that the nitrous oxid is given properly and the patient is kept in the right condition With alcoholics, however, and some athletes, it is often necessary to give a little ether in addition, but in a minimum amount The total is very small, indeed, in these cases Another objection is that more time must be taken to do these operations, but time should not be measured against safety

Dr Charles K Teter, Cleveland Nitrous oxid oxygen in general surgery has been in practically constant use in at least two Cleveland hospitals for over ten years Cleveland was, I think, the first city where a nitrous oxid plant for the manufacture of nitrous oxid was installed in a hospital The plant was installed first in St Luke's Hospital about nine years ago and a little over one year afterward another plant was established in Lakeside Hospital These plants, with modifications, have been in use ever since Constant use of nitrous oxid in major surgery has proved to us that this anesthetic has its limitations, and I do not think that we have been led so far in our enthusiasm as to claim that it is the anesthetic of choice in every case In most cases of minor surgery nitrous oxid and oxygen will give sufficient depth of anesthesia so as not to interfere with the accomplishment of the operation The physical properties of nitrous oxid are such that it must be given at least 80 to 95 per cent. pure in order to bring about surgical anesthesia No oxygen is liberated during its sojourn in the organism Therefore it is an asphyxiant as well as an anesthetic, so that when you withhold less than the normal amount of oxygen in atmospheric air you have a certain degree of interference with normal oxidation, and if you give as high as 20 per cent of oxygen you will not have surgical anesthesia, as we understand it You will have perfect unconsciousness but not relaxation of the musculature Then it becomes necessary to add something to nitrous oxid Our method is to use preanesthetic narcotics as morphin, ⅙ to ¼ grain, atropin, 1/150 to 1/100 grain, then if relaxation cannot be had, a sufficient amount of ether vapor is added to the mixture. Some object and say, "If you must add ether what is the use of giving nitrous oxid at all?" I claim that if you can withhold even 2 ounces of ether in a major operation you have done a great favor to that patient. In most of the apparatus on the market you will find ether attachments and some of you have probably noticed that there is a considerable amount of ether used during an hour's anesthesia. For instance, there may be 4 ounces of ether taken up in the gas as it passes through it, but you must remember that the 4 ounces of ether does not all go to the patient. There is a considerable volume of the gas escaping through the exhalation valve and a lot of this ether is wasted.

STAB WOUNDS OF THE CHEST INVOLVING THE DIAPHRAGM

WITH DIAPHRAGMATIC HERNIA OR EVISCERATION *

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Although man has inhabited this world nearly 8,000 years and has possessed a temper since the time of Cain and Abel, and has had in his possession a knife or some kindred instrument, with which he has inflicted wounds in almost every portion of the human anatomy, yet not until recently have there appeared in literature any reports of stab wounds of the diaphragm, with diaphragmatic hernia, or evisceration.

The question then naturally arises, Is there an increase of this character of injuries, or are we becoming better diagnosticians and now recognize them, where they were previously overlooked?

The latter is the more logical conclusion, as there has been no change in the anatomy of man, and little or none in the character of cutlery used by him in settling his personal difficulties.

The term "hernia," as applied in these cases, is a misnomer, since hernia always has a sac, which in these cases is lacking. Consequently the term "evisceration," which is used entirely by the French writers, is the more correct.

Diaphragmatic hernia and evisceration are found on the right side in 8 per cent., and on the left side in 92 per cent. of all cases. The small percentage of cases found on the right side is due to the fact that the liver is situated on this side, and acts as a plug for almost any opening that may be made in this locality.

Quite recently, a great deal has been written on this subject, and the most comprehensive articles have been contributed by Wolf, Iselin, Suter and Magoula.

Magoula's article was published in 1910, and includes all cases previously reported by Wolf, Iselin and Suter, with some additional cases. Therefore, I invite attention to a brief review of this paper.

Magoula reviewed the whole subject of stab wounds of the chest in 1910, and reported 190 cases of injury to the diaphragm, but by no means did all of these have hernias.

Of the sixty-four cases reported by Suter, forty-four cases showed protrusion at the outer wound, five showed protrusion of the omentum into the pleura, ten showed only slight protrusion through the diaphragm, and five showed the stomach herniated through the diaphragm.

Of the thirteen cases reported by Wolf, five showed hernia.

Of sixty-one personal cases reported by Magoula, nine showed the omentum at the outer wound, and four showed protrusion through the diaphragm.

Of forty other cases collected by Magoula, twelve showed the omentum at the outer wound, and four showed the viscera through the diaphragm.

Hence, of the 190 cases reported by Magoula, ninety-eight, or nearly 52 per cent., showed hernia, or better, evisceration.

From this brief review it is seen that the total number of cases of wounds of the chest, involving the diaphragm, with a hernia, is ninety-eight, plus twenty-five others that have been reported since the publication of Magoula's paper, as follows: Bamberger, Frassi, Caffee, Gautierand Du Seutre, Fato, Gourevitch, Gougorlof, Klaggs and Krymholz, each one; McGuire, Negroni and Wiess, each two; Jobes three, and Davis seven, making a grand total of 123 cases which have been reported.

To this number I wish to add six cases which I treated at St. Joseph's Infirmary, Houston, Texas.

REPORT OF CASES

Case 1.—Man, aged 28, white, married, was admitted to the hospital with a stab wound of the left chest just posterior to the midaxillary line, through which about 6 inches of omentum were protruding, at the ninth interspace. The wound was inflicted by his wife with a carving knife. He was immediately given ½ grain of morphin and 1/150 grain of atropin. He was taken to the operating room, and under anesthesia a median incision was made. A careful examination of the cavity showed that there were two incisions in the omentum, and a small incision in the stomach through all coats except the mucous membrane. The bleeding points were caught and ligated, and the incision in the stomach was closed with a fine catgut suture.

Further examination of the cavity disclosed the fact that there was an opening in the diaphragm, through which some of the viscera had escaped into the thoracic cavity. With one hand in the cavity I succeeded in replacing them, but they were immediately sucked back into the thorax, with a great deal of force and an audible, sucking sound. The abdomen was then closed, as we found it next to impossible to conclude the operation through this opening. We then enlarged the wound of entrance, excised a portion of the rib, and, on inspection, found that all of the transverse colon, and omentum, a portion of the descending colon and jejunum and stomach were in the thoracic cavity. After some difficulty, they were replaced into the abdominal cavity, and the edges of the rent in the diaphragm were caught up with forceps and sutured with No. 3 chromic catgut, and the outer wound was closed without drainage.

The patient was then taken to the ward and made an uneventful recovery. He left the hospital in twelve days, and today is in perfect health.

Case 2.—Man, aged 32, white, married, was brought into the hospital with a stab wound of the left chest in the midaxillary line, at the seventh interspace, with 4 inches of omentum protruding. He was suffering from profound shock, but reacted nicely after the administration of ½ grain of morphin and 1/150 grain of atropin. He was then taken to the operating room and under ether anesthesia, a median incision was made. A portion of omentum and stomach was found in the thoracic cavity with a large rent in it, from which there was profuse hemorrhage. This point was picked up and ligated, and, no other injury being found, the abdomen was closed in the usual way. The wound of entrance was then enlarged, as in the first case, but we did not find it necessary to resect the rib. The stomach and omentum were returned into the abdominal cavity, the opening was closed as in Case 1, and the patient was sent to the

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ward This man had a stormy time, as he developed an acute dilatation of the stomach on the second day after the operation, but by free use of the stomach tube he recovered, and left the hospital on the fifteenth day and, when last heard of, was in good health

Case 3—Man, aged 28, colored, married, was brought into the hospital markedly intoxicated, with a stab wound in the left chest about 1 inch posterior to the midaxillary line at the eighth interspace, with 3 or 4 inches of omentum protruding He was profoundly shocked when admitted He was given ½ grain of morphin and 1/150 grain of atropin He was then taken to the operating room and under ether anesthesia, a median incision was made The transverse colon and omentum were found in the chest cavity, a slit in the omentum, and a considerable amount of blood were found in the abdominal cavity The bleeding point was caught up and ligated, and the abdomen closed and the thoracotomy performed as in the previous case The patient was sent to the ward and did fairly well for about fifteen hours, when he began to be very restless, his temperature began to rise, his kidneys became rather sluggish, and in spite of all we could do for him, he died about forty-eight hours after the operation, from what we diagnosed as acidosis

Case 4—Man, aged 26, colored, single, was brought into the hospital with a stab wound of the left side at the seventh interspace, in the midaxillary line, with about 3 inches of omentum protruding through the external wound This patient was so profoundly intoxicated that he could not stand up He complained of very little pain, and that was near the sternum His abdomen was opened and examined, and a large amount of omentum was found in the thorax, there was found in the transverse colon an opening about 2 inches long This was closed and a drain left in the abdominal incision, as some feces were found in the cavity The chest was opened, as in the previous case and the opening in the diaphragm closed without any difficulty The patient was sent to the ward and did very well for the first twenty-four hours, when he developed almost the same symptoms as those in the previous case, and died in thirty-six hours after the operation

Case 5—Man, aged 26, white, single was brought into the hospital with a stab wound of the left side at the tenth interspace about 3 inches posterior to the midaxillary line He showed a fair amount of shock, and had 6 inches of omentum protruding through the external wound The abdomen was opened in the usual way, and a portion of the stomach was found in the thorax, there was a wound in the gastrocolic omentum, which was bleeding rather freely This bleeding point was ligated, and the chest opened in the usual way, after the abdomen had been closed without drainage The patient was sent to the ward and given the usual treatment namely, ¼ grain of morphin according to circumstances water freely, and allowed change of position when desired After forty-eight hours he was given a saline cathartic and the next day was given a light diet He made an uneventful recovery and left the hospital on the tenth day, when last seen he was in the best of health

Case 6—Man, aged 30 white, single entered the hospital with two stab wounds of the left chest, one at the seventh interspace anterior to the midaxillary line and the other at the ninth interspace 3 inches posterior to the midaxillary line Being on the lookout for this class of cases, we at once thought of a stab wound of the diaphragm and decided to do an exploratory thoracotomy We first enlarged the upper wound, but could not detect any injury to the diaphragm at this point, so we closed this opening and enlarged the lower wound, where we found a small opening in the diaphragm, with a portion of the omentum in the thoracic cavity This opening was closed without drainage, but the abdomen was not explored, as the patient's condition was so good that we could not believe he had received any injury to any of the abdominal viscera He was sent to the ward and made a very rapid recovery, being able to attend court on the eighth day He has had no trouble and now is doing hard work in Houston apparently in the best of health

COMMENT

From this report it is evident that the diagnosis was readily made before operation in every case except one, as the omentum was protruding through the external wound in all except the last case

This is not always the case, however In many instances, as substantiated by Magoula's report, the diagnosis is not made until months or years later, when the patient begins to show signs of obstruction, as the result of adhesions around the viscera, which have herniated through the opening in the diaphragm This, in many cases, is not diagnosed except by the use of the Roentgen ray

As the result of difficulty of diagnosis in most of these cases, we are confronted with questions such as these First, What is the duty of the surgeon in such cases? Second, How far should he go, and how much time should he spend in attempting to arrive at a diagnosis before he is warranted in doing an exploratory thoracotomy?

The mortality in these cases is very high, both in the complicated and the uncomplicated For instance, in the uncomplicated cases we find in Magoula's report a mortality of 20 per cent, and in the complicated, 64 per cent

With such a high mortality, therefore, a surgeon should be very careful not to do anything that would increase the shock, yet he should not sit idly by and allow his patient to go into a profound state of shock before going to the rescue

Consequently, in cases in which we cannot arrive at a diagnosis quickly, but have reason to believe that there is injury to the diaphragm, and probably to the abdominal viscera, I believe that it is not only the surgeon's privilege, but also his duty to resort to an exploratory thoractomy By this exploratory operation he will be able, not only to control any bleeding, or repair any damage that may have been done to the viscera, but also to close any opening that may have been made in the diaphragm, which, if not closed, may be the cause of a great deal of trouble, or death of the patient in later years

In conclusion, let me make a plea for the more general use of exploratory thoracotomy in the treatment of these cases, since, if it is properly done, the dangers of the condition are not increased, and certainly many lives will be saved which otherwise would be lost

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ABSTRACT OF DISCUSSION

Dr James E Moore, Minneapolis What shall we do in cases of stab wound in the chest? Too often the tendency has been to wait for the patient to bleed to death before we see whether we could do anything We were justified somewhat in our hesitation because until recently whenever we attempted to open the thorax we had staring us in the face the collapse of the lung Then we got the cabinet of Sauerbruch Fortunately we do not need that today, for we have the simple method of intratracheal insufflation Giving the anesthetic in that way we can open the thorax with impunity so I would advise every man when he has a patient come to him with a stab wound of the chest, particularly if he knows that the instrument pointed downward, to make an exploratory operation It is simple and safe and he will save many lives by so doing

Dr Charles C Green, Houston, Tex The main danger in thoracotomy is collapse of the lung It is the principal cause of shock in these cases In accident cases, such as I have reported, that condition already exists By enlarging the opening and getting in there, it is a great deal easier to pick up the diaphragm from above and pull it up to the opening in the chest than it is to work from below After my first operation I found that by making a long intercostal incision it was not necessary even to resect a rib, but having assistants, using small powerful retractors it was easy enough to pull the ribs apart, pick up the diaphragm and suture it Just as long as you can pick up the diaphragm and hold these edges together there is practically no danger of the viscera being forced up against the diaphragm and included in the suture I do not see why there should be many deaths unless there is a great deal of shock or trauma

THE FACTOR OF FEAR IN NERVOUS CASES*

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In many cases of functional nervous disorder, the factor of fear is quite obvious But in many cases, though equally important, it is not at once apparent Of the latter, there are numerous varieties which may be divided into many groups One group embraces patients known to have physical courage

A few years ago there was referred to me the most noted pugilist of his day, a specimen of perfect physical manhood, known to be not only fearless in the ring but peculiarly carefree if not careless He was suffering with what were considered rather vague and baffling nervous symptoms, principally insomnia, lack of interest, and moodiness A careful analysis[1] soon revealed that some trifling symptoms due to high living and domestic friction had served to put the idea into his head that he was losing his mind This phobia was his sickness, and the fear so possessed his soul that he was good for nothing until he got rid of it Needless to say, the patient himself was quite unconscious of the nature of his trouble, and his physician had overlooked it

A sheep rancher of Wyoming was referred to me because of insomnia, loss of appetite, abdominal distress, general nervousness and inability to look after his ranch What really was the matter with him was fear of cancer of the stomach This phobia completely unnerved him and caused him enormously to magnify every bodily sensation But was he a nerveless coward? Decidedly not There was a time when the cattlemen of the Far West made sheep raising a hazardous occupation Through those dangerous years he lived without a tremor, though he never went to sleep without a rifle by his side Once he was informed that three cattlemen had started out "to get him," and the information was correct He mounted his horse and, properly armed, rode to meet them As he expressed it, he "talked them out of it,"[2] and the three would-be assassins turned and rode away In this encounter he was not in the least apprehensive or uncomfortable, and I learned of the incident only in casual conversation about his business

A policeman, 49 years old, consulted me for intractable insomnia, head pressure, general nervousness and loss of weight He was not a man to suspect of fear For many years he had been on active service in one of the worst precincts of Chicago, and on account of his familiarity with criminals was frequently sent after the worst types He had been in numerous "gun" fights Once a notorious "gun" man standing beside him fired point blank at his head All this disturbed his equanimity not a whit And yet his illness was the result of fear, pure and simple It came about in this way a malicious person had preferred against him charges of misconduct, and he was cited to appear before the trial board This worried him greatly Innocent, he keenly felt the disgrace of the accusation and feared that he might be suspended or even discharged He trembled for his well earned good name and for his home, on which there was a mortgage Naturally, he began to sleep poorly, to have queer feelings in his head, and then to feel uncertain of himself At this juncture some friends sympathetically told him that one could go insane from worry These were the steps fear of disgrace, fear of financial collapse, fear of insanity But did the patient know all this? Not he He knew only that he was nervous, that he suffered, and that he did not feel sure of himself

A lovable old general, who had gone into the Civil War a private and served throughout the conflict with the greatest distinction, was sent to me because he was quite a nervous wreck Twenty-five years before he had strained or sprained his back The next morning he fainted and then rapidly developed what was called "spinal irritation" From this he suffered for many years, but finally made a relative recovery under the skilful guidance of Dr S Weir Mitchell About four months before he came to me a saddle had turned with him, giving him a rather severe but (physically) not serious jar At once all the old trouble returned He was nervous and sleepless, and complained of pain and great weakness in the back He never went out without a queer-headed cane which he could use as a support for the spinal column the moment he stopped walking and had to stand The whole trouble was fear, vague as to object but very definite as to intensity At first I did not tell him he was scared sick because he would not have believed me and I should have lost his confidence But a course of training with the temporary use of bromid rather rapidly put him on his feet and made him comfortable, and he left for his home about twelve hours away Unfortunately he took a road he never had traveled on, a rough one The jarring not only disturbed sleep but started little "fear thoughts" about its possible effect on his spine These worries kept him awake the next night, and in a panic he hastened back to Chicago Even then he was so far from knowing that he was afraid that I had to explain to him the steps by which he had become the victim of fear, and clinched it by saying, "In short, General, you were a d—d coward" And this was true, although addressed to as brave a soldier as ever led his men In other words, that a man is as brave as a lion is no reason why he may not have a paralyzing fear He may be utterly devoid of fear of many dangers and sick of fear of one other

A mine manager from Mexico came to be injected for trifacial neuralgia And he made a big fuss every time I introduced the needle As he said, "That little needle 'gets my goat'" At this time there were serious labor troubles in Colorado, and I happened to ask him if his labor was organized He said it was not, but that once three labor organizers walked into his office and announced that they were going to unionize the mine "What did you do?" I asked "Kicked them out so quick they didn't know what had happened" "But," I said, "they might have shot you up" "Shoot up h—l," was the reply "They didn't have time" That is to say, the revolvers of three aggressive labor leaders didn't "get his goat" at all

This case is analogous to the phobias and, like the four preceding, illustrates a rule applying to many of them We fear the unfamiliar, the things of which we are ignorant All his life my patient had been used to tough men with pistols but not to physicians' instruments German students are timid about bare knuckles but not a bit afraid of the Schlager that hacks their faces to pieces The boldest financier may be inexpressibly scared about his liver The one almost universal fear of the human race is Hades, or what follows death — the one thing of which we all know absolutely nothing

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* Read before the Section on Nervous and Mental Diseases at the Sixty Seventh Annual Session of the American Medical Association, Detroit June 1916

[1] This does not mean so called psychanalysis In this paper the tenets and methods of the freudian school are not taken into consideration

[2] His explanation of "talking them out of it" is not devoid of psychologic interest, and also shows how undisturbed he was Essentially it was as follows "Well, you see, the longer a man talks the less apt he is to shoot, and I got them to talking And then, of course, they knew I was a crack shot and that if they made a move I'd be pretty sure to get one of them and maybe two before they could get me And each of 'em kind of hated to be the first one"

But to this rule there are notable exceptions exceptions which show what a fundamental and powerful emotion fear is, what a primitive race we are and how we still are largely controlled by instincts and emotions not by knowledge and judgment

A physician I never had seen hurried into my consultation room gasping for breath in a peculiar way His mouth was open and he was taking quick, very deep inspirations at not too frequent intervals Often he placed his hand over the precordium It was easy to see that he was not in pain and had no organic dyspnea He asked me to examine his heart I asked him who had already examined it He named half a dozen men more competent than I to pass on it All had pronounced it normal I declined The man himself proved to be a competent and intelligent practitioner A few years before he had run at top speed about half a mile to catch a train He just caught it, clambering onto the rear platform as the train gathered headway Of course he was out of breath and his heart was beating violently At that moment came the thought "What if I should have an acute dilatation now and here with no possible help?" The thought was terrifying, and he was in acute distress until he reached his destination, a short distance away That was the beginning of a series of periods when the fear of heart failure would get the better of him, and in many of the attacks he breathed as when I saw him, the feeling being that the air did not go deep enough, did not reach the right spot[3] There were times when every afternoon from 2 to 4, under one pretext or another, he would sit in a nearby drug store because he knew that then none of the physicians of the neighborhood had office hours, all were out making calls And he just had to be where he could get quick assistance if necessary If he were called to a house beyond the thickly settled districts he could not compel himself to cross the vacant spaces, but would turn about and go home, all because of the fear of sudden heart failure, his own knowledge and experience and the confident assurance of numerous heart experts to the contrary notwithstanding

To state the thesis another way, intellectuality seems to be no effective protection against phobias It is largely a question of temperament The intellectual and cultivated are quite as susceptible as the stupid and ignorant[4] And regarding this temperament one may frequently make a most interesting observation of what at first sight looks like a psychologic paradox Concerning these phobia patients one very often hears members of the family say, "She never gives up," "Nothing discourages him," "He's a hard fighter," "She's full of courage and patience," and the like All of which is perfectly true, and yet this person is in the clutches of an overpowering fear The explanation lies in the nature of the individual They are the people dominated by an idea The absolutely undaunted young football player, who plays a whole period after he has been so battered that he is practically unconscious, does so because he is possessed by the idea that he's got to win and he's going to The same boy may be just as much in the grip of an idea that he is ruined by masturbation The mother who is absolutely tireless and never loses courage in the nursing of her child, because she feels that she must and will save it, may be just as strongly possessed by the fear that she may suddenly lose control of herself and cut the child's throat The born enthusiast makes a fine phobic Had her obsession taken another direction, Joan of Arc would have made a beautiful case of *folie du doute* or of agoraphobia Martyrs and profound psychasthenics are often made of the same stuff[5]

To insist that one should be careful not to confuse phobia with impulse, the fear of doing a thing with a sudden desire to do it, would seem to be a work of supererogation But patients themselves frequently make this mistake, and physicians sometimes follow their example One of the best English textbooks on insanity cites in some detail a typical case of phobias as one of homicidal impulse Brief mention of a few cases will make the type clear

A woman of 50 years habitually sat in a far corner of the room because she said she had an impulse to throw herself out of the window I had the greatest possible difficulty in getting her to approach the window of my office (ninth floor) because of her overpowering fear that she might suddenly lose control of herself and jump out She went toward the window haltingly with tense muscles and anxious countenance and clinging frantically to a heavy desk, as if some one were shoving her toward the window and she resisting.

A gentleman came to me in great distress of mind because he said he had an impulse to kill his two young sons He had given away his revolver, had carried an ax about a mile away and thrown it into a river, and had disposed of the domestic clothesline in the same way, having had permanent wire put up in its place, all because the idea how easily he could kill the boys kept recurring with such intensity that he feared he might in some way suddenly do it

A very devoted mother was in the same horribly distressing state of mind regarding her two little girls She never went into the kitchen because the carving knives were there, had all meats carved in the kitchen, and persuaded her husband to take his razors out of the house—this because she was constantly in mortal terror for fear she might suddenly have an overpowering impulse to harm the children What she came complaining of was nervousness and sleeplessness. Only after close questioning did she tearfully confess to an "impulse to kill the children"

A frequent fear, which the patient looks on as an impulse, is that of doing some mal apropos thing in public, of using obscene language or yelling or slapping someone or making a suggestive movement Frequently such fears are really fear of insanity, of suddenly losing self-control But the conception of the dreaded act recurs so constantly and forcibly that the patient gets the idea that he has a tendency to commit it, and the doctor takes his word for it Needless to say, the diagnosis is vital for both prognosis and treatment, but is generally very easy The patient at once acknowledges that he does not want to do the thing, never did want to do it, and has no reason for doing it, but fears that for some reason in some way he may suddenly have an abnormal impulse to do it, and will not be able to resist the impulse

An interesting type of case, and one frequently misunderstood, is that in which the patient suffers from the physical results of the fear, but is quite unconscious that his trouble originated in fear and really still is a definite fear As indicated before, these cases are very common Sometimes it is easy to unearth the fear and its origin, sometimes difficult and occasionally impossible An easy one was the following

A young commercial traveler consulted me because of nervousness which came on in restaurants and hotel dining rooms He dreaded to enter such a place because as soon as seated he became shaky and apprehensive, and had palpitation, precordial distress, soon followed by nausea and cold perspiration For three months he had been unable to take a meal in a public eating place, which meant that he had been unable to work for that length of time Only a few minutes were needed to learn that some months before, in a restaurant, he had been taken violently ill with nausea and profuse emesis followed by active diarrhea and marked prostration, probably ptomain poisoning This most disagreeable if not alarming catastrophe was unconsciously associated in his mind not with something he had eaten but with his presence at table in a restaurant, and it was fear of a recurrence of the thing in a public place, surrounded by people and no doctor near, that caused his symptoms Although the patient had had no suspicion that he was afraid, he recognized the logic of the situation when it was presented to him, and made a rapid recovery

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[3] This sensation is frequent in neuroses involving ideas of the heart, lungs and throat, and some others

[4] An intellectual and cultivated person may not be in the least matter-of fact That he may be lacking in common sense is notorious

[5] I have recently seen a successful theological teacher and evangelist who was a missionary in darkest Africa where he heroically endured great hardships and undismayed faced manifold danger yet now was suffering with an overwhelming fear of closed places

Not quite so simple was the following

A gynecologist sent to me a young married woman with vaginismus She had been married many months, but coitus had not been completed No cause was obvious The introitus was normal and not especially sensitive The patient had no prudish notions regarding intercourse, was deeply in love with her husband and anxious to fulfil her functions as wife and prospective mother Detailed inquiry seemed to show that the trouble was not so much local pain as instinctive resistance and overpowering inability to endure the act I further found that not only could she not endure to have the husband touch the pudenda, but even his touching the breasts caused a very disagreeable sensation with a strong feeling of defense The cause of this great and greatly regretted repugnance was totally unknown to the patient She never had been assaulted, nor had any such case impressed her She never had had any disease or injury of the genital region or of the breasts, nor to her knowledge had any of her relatives or friends had any such trouble The same applied to operations in these spheres She did not remember reading anything along these lines, nor had any one told her disconcerting tales of the nuptial bed But when finally I asked her if she had ever seen pictures that impressed her, she quickly recalled that when about 11 or 12 years old she had seen in a foreign gallery paintings depicting the breasts of women being slashed, the nipples seized with red hot pincers and the like These had made a deep impression on her And at just that time her mother had talked to her and her sister about the horrible consequences of masturbation, had commanded and besought them never under any circumstances to so much as touch the genitalia Here lay the foundation of the hidden fear and repugnance, a fear which had existed for years, of which she was quite unconscious, but which still was effectively potent Treatment was brief because recovery was rapid

Of this type are many cases of agoraphobia or claustrophobia The patient either does not know he has a fear or he knows only that he has an ill defined apprehension What he complains of is simply that in certain places or kinds of places he is exceedingly nervous and has certain alarming sensations and physical signs The principal ones are tremor (or a feeling of internal tremor), palpitation, precordial oppression, epigastric distress, great weakness, cold or hot perspiration, flushing of the face, "rush of blood to the head," and a feeling of dizziness and dyspnea (sometimes with tachypnea) Frequently great emphasis is laid on gastric or abdominal symptoms, and not infrequently the patient complains of uncertainty on the feet or staggering, which does not exist Oftentimes such a patient when asked what he is afraid of promptly responds that he is not afraid of anything Indeed, to deny fear seems to be almost as instinctive as that emotion itself He may deny it with indignation, asserting that he is not afraid but that he is uncomfortable and sick A couple of cases will illustrate

A woman, aged about 60, complained of nervousness, palpitation of a peculiar dizziness or lightness in the head She felt so uncertain of herself that she could not cross a large room unless some member of the family took her hand Her most intimate friend lived just across the street, but she could not cross to see her She had valiantly tried She would hurry down her own front steps and start with a rush for the other side of the street, only to stop at the curb as at a stone wall, held by some force which she did not understand She could walk along the curb to the corner, but the moment she tried to cross, she had a peculiar sensation in the head, precordial distress, became weak and trembling, and simply could not put her feet further The thing was a mystery to her, but it did not take very long to ascertain that an attack of dizziness some weeks before, the sudden death of a friend from heart disease, and the cerebral apoplexy of another had combined to fill her with a fear that she might suddenly drop dead The fear once definitely exposed, treatment was simple and quickly successful Perhaps it is worth while to note the procedure She was taken to a hospital, saw no visitors, first took short walks with a nurse beside her, and then with the nurse 20 or 30 feet ahead Soon the nurse walked a short distance behind her, then on the opposite side of the street Following this the nurse would stand on a corner while the patient walked to the next corner and back When she could do this with complete ease and comfort, the nurse waited while the patient walked around the block The rest was easy

An active and successful business man was unable to cross the open space or common between Michigan Avenue and the station where he daily took train to go home He always waited on the curb until other people were crossing When he tried to walk the 150 yards or so alone, palpitation, precordial oppression, a queer feeling in the head, and great weakness stopped him He knew that he was physically sound, and recognized his disability as irrational, he said he felt as if some one ought to give him "a good swift kick" But he had not definitely recognized his trouble as a fear that he would drop unconscious while crossing the open space, with no one near to help

A few years ago I was asked to examine a man, aged about 40, with "paroxysmal tachycardia" I rather demurred, saying that heart cases were out of my line But I did examine him and could find nothing abnormal Nor did any amount of exercise through which I could put the patient cause tachycardia Finally close questioning brought the statement that he could walk any distance at any gait without palpitation provided his wife were along, but that a leisurely stroll by himself would be sure to bring it on At once I sent him out to try it, and he came back with a pulse of 140 Then for the first time I got at his fear which was the cause of the tachycardia

Occasionally the physical manifestations are pronounced, although the patient knows perfectly well that a groundless fear is the cause A good example is the following

A woman, aged 42, well educated and unusually intelligent, had had since the age of 6 an overpowering fear of thunder storms At that age she had suffered "a stroke of lightning" She was running home for shelter from the storm when just as she opened the door a bolt of lightning struck very near and she fell through the doorway onto the floor Whether or not she received any electricity she could not tell me, but is said to have been temporarily paralyzed In any event she received a great shock, possibly of fright alone The timidity engendered by this occurrence was fostered by the parents, who allowed the child to take refuge in the cellar or in a dark closet whenever a storm approached This astraphobia increased with the years After a time a thunder storm caused not only a feeling of apprehension, oppression, tremor and palpitation, but also nausea and later violent vomiting and retching In the meantime the patient had developed grave organic heart disease When she came to me the situation was serious, inasmuch as the strain of each attack of vomiting and retching was more than the heart could compensate Here, then, was a case in which the physical effects of a phobia were actually dangerous to life, although the patient quite well understood the nature of her trouble I may add that in this case the nervous symptoms, at least the nausea and vomiting, were entirely controlled by means of hypnotism

As has already been intimated, properly to elucidate a case of phobia, manifest or latent, generally one must go back to the very first appearance of the symptoms and investigate the circumstances surrounding it In most instances the mechanism is quite simple The patient has had some distressing or peculiar sensation or some disability from adequate physical cause This sensation he at once or (more often) subsequently correlates with some serious malady or calamity which in some way has been brought to his attention It goes without saying that the patient has as prerequisite a hypersensitiveness or impressionability Consequently, often a very small trauma suffices From my cases I note as the initial disturbance ptomain poisoning, tobacco poisoning (excessive smoking), dizziness or syncope from overheated and overcrowded rooms, alcohol poisoning, the weakness or trembling from typhoid or other acute illness or following confinement or an operation, heat stroke, discomfort from excessive eating, rheumatism, aural vertigo (quite a number), tinnitus, syphilis, nocturnal emissions, the shock and hemorrhage of initial coitus, cerebral thrombosis, migraine, the distress of hyperacidity or indigestion, uremic convulsions, night numbness or night palsy, and predormal shocks

Some phobias are very like the antipathies harbored by many people (for instance, for cats), so well depicted by Weir Mitchell and others Such phobias may be hard to account for, as are the antipathies, but some are relatively simple The following case is unique in my experience

A woman, aged 27, could not bear to look at the sun, moon or stars, and was most uncomfortable whenever she thought of them or heard them mentioned She never went out of the house at night unless compelled to do so, and would not even look out of the window On a bright day she preferred to stay in with the shades drawn She had become so worried and nervous that life was a burden to her and she a burden to her friends Whisky gave her some relief, and at times she indulged to excess As may be supposed, she had always been sensitive and timid about many things In addition, she had been a spoiled daughter until she married an indulgent husband On this basis her trouble developed as follows At the age of 10 she had been in a tornado which she thinks did not frighten her excessively but left her afraid of storms A year later her mother in great agitation awakened her and told her to dress quickly as another tornado was coming Apparently these events left her very timid as to Nature and afraid of the dark At 22 she married and went to live on a ranch the nearest neighbor being 15 miles away Here she was lonesome and rather unhappy, evidently oppressed by the isolation, the vast stretches of lonely range and her own impotence A year after marriage a man came along with a newspaper telling that Halley s comet was about to appear and detailing all the horrible catastrophes said to accompany its coming This recital had the immediate effect of giving her a nervous chill She went to her room and took a big dose of whisky, but could eat no supper and could not sleep that night This fear of celestial calamity rapidly developed into fear of all heavenly bodies, a fear which would seem to belong to the middle ages, but which did incapacitate a rational human being of this twentieth century

One particular fear I wish to mention, as it is not uncommon, but frequently is unrecognized, principally because of the reticence of the patients So far as I know it has not been named, but might be called hierophobia I refer to a fear afflicting clergymen in their public functions Oftenest I have seen it in Catholic priests whose duties about the altar are more complicated and solemn than those of a protestant preacher in the pulpit Another reason, I believe, for its greater frequency in the Catholic clergy is that they officiate fasting, and the primary attack has been induced by the faintness of a man working on an empty stomach and who perhaps has slept poorly, has been up most of the night, or has been smoking excessively In nature it is just like other phobias For some casual physical reason the patient experiences a faintness or dizziness, or a tremor or palpitation, or something which suggests to him that he might lose control of himself and do something unseemly or that he might lose consciousness or have a stroke One patient noticed that in administering the sacrament his hands trembled This begot two thoughts first, that his parishioners might think he had been drinking (he was quite rubicund but very temperate), second that he might blunder and spill the host or the sacramental wine This patient, like most of the others, complained not of his fear but of general nervousness, tremor, poor sleep, head pressure, etc Methodical and patient investigation was necessary to extract the kernel of his trouble and show it to him

To consider the treatment of these cases forms no part of my present purpose, but I will allow myself two remarks First The remedies most frequently prescribed for these disorders are absolutely futile except for possible suggestive value How can "tonics" or "sedatives," change of climate, a vacation, tacking up a floating kidney, lifting up a prolapsed uterus or rest in bed and massage eradicate fear? Would a winter in Florida, a trip around the world, an operation for hemorrhoids, or strychnin pills make a sinner less afraid of eternal punishment? Second The way to remove fear is to show the patient what it is and then teach him to demonstrate to himself that it is groundless In short, educate him out of it as he has been inducted into it If a child is afraid of a dark room we do not give him soothing syrup and tell him there is no room and no darkness Nor do we suddenly throw him into the place of dread We explain the darkness and the entire absence of anything to be feared Perhaps we light the room and then make it dark again Then, when we are sure he is ready for it, we take him kindly but firmly by the hand and lead him into the dark room, or perhaps only to the door or part way in Finally, he goes in alone, and when he has fully demonstrated to himself that there is nothing there to be feared, of course he is not afraid and he is cured We are only children of a larger growth And not so very much larger either

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ABSTRACT OF DISCUSSION

Dr Frank Parsons Norbury, Springfield, Ill I am a bit disappointed in Dr Patrick s paper in that he did not go into the psychology of fear more extensively I always look on this subject as one belonging to psychobiology, involving questions of survival self-preservation, primary emotions and instincts If we look at it from this viewpoint it does not matter what is the fear, but the fact that that fear exists And when you analyze fear on this basis even without the details, and consider the essential instinctive inborn condition that is present, I think we will then understand the whole fear habit of man. Of course, we must ascertain what is the fear. The question of survival is always paramount and the individual is put on the defensive by the emotion of fear. True, that is according to what fear stimulus may exist. We should consider that fear is not limited to any one condition, but that it is a tendency, like all physical traits, involving all of us alike. Just as hunger is not limited to any particular desire for food of a certain quality, but the question is that we desire food, and this involves all centers and all cells. And so it is in fear. When we have fear the reaction is fear alone and involves the stability of all cells. It is therefore a question of biology and in consideration of the subject fear we should start from that viewpoint.

Dr. Patrick apologized when he mentioned the freudian doctrine. To me this is an essential question. In my judgment it is more than Freud's emphasis on the sexual instinct. We should call it the freudian wish, in which is involved the essential determining factor of life itself, at least in life preservation. The question is one requiring full elaboration of all the psychobiologic phenomena. And for that reason, when we take into consideration the fact that we are dealing with primary emotions and instincts, with the laws of survival, we have a rational basis for procedure. There may be an association test that will strike real fear, the elements that are concerned in the foundation of the complex, because fear is the root of many of our intellectual strivings. It is the strife which brings about adjustment and when you know that, you are readjusting and reeducating the personality. The essayist speaks of educating the child to go into the dark. If you get down to the primary analysis of why the child is afraid of the dark and show that it is an element of survival and of self-preservation, and then treat the question from the standpoint of what are the primary instincts, you will by this means get a better answer. You have to make an explanation. The child is seeking an explanation, he is looking for an answer to his instinctive reaction to his fear, just as you or I would in any other reaction. This is normal, it is a stage in development and an onward movement in individual development of personality. The fact of the policeman being not afraid to meet the criminal alone only has value as an evidence that he has adjusted himself to such fears. This is the biologic consideration of the question. The other reaction to fear is only of importance because of the fact that he has a fear.

Dr. Harold N. Moyer, Chicago: Dr. Patrick said that it was a work of supererogation in this organization to separate impulse and fear and explain the distinction. I do not believe that is true. He tells us that the freudian doctrine is not essentially sexual, but here we are confusing the two things again, fear and impulse. And that is the point. We are afraid of the freudian doctrine, we fear that it is complicated by a sexual impulse. We do not want to be charged with the latter, hence we are afraid of the former. That is the doctrine. I suppose that within the month hundreds of people are sent to institutions for the insane with the statement that they are not only insane, but that they are suicidal. What is the basis of that statement made in their committal papers? Why, they have confessed to the doctor or to the examining magistrate or to somebody that they were afraid they would kill themselves. But they never intended to kill themselves—they were *afraid* they would. It was simply a morbid fear, they were not suicidal at all. A man quietly puts away his razor for fear he will kill somebody, hence in the papers regarding commitment he is put down as homicidal because he is *afraid*, he says. That is the common misconception—the relation of fear and impulse.

Dr. Robert McGregor, Saginaw, Mich.: The emotion of fear must always naturally arise from an instinctive basis. Its reaction is as forceful and uncontrollable as a reflex. I believe that fear of a vague and unreal kind plays a potent part in many of the manifestations of hysteria. For example, I knew of the case of a strong, husky farmer who stiffened out in a tonic spasm while the dentist was applying the rubber dam. Two days later he returned, reinforced by a couple of his neighbors, when he went through the ordeal without a hitch. The remedy in the young subject is disciplinary and educational, along the lines of rendering more stable the emotional equilibrium.

Dr. Walter B. Cannon, Boston: The emphasis which Dr. Norbury has placed on the biological aspects of this discussion is well deserved because of the fundamental character of these emotions and the instinctive impulses that attend them. Dr. Patrick is, I believe, doing an important service in calling attention to the significance of these fundamental experiences which human beings share in common with the lower animals. During the past four or five years we have been studying the effects of fear and of aggressive feeling in lower animals, and the results obtained have rendered the suggestions which Dr. Patrick made today particularly interesting to me. He pointed out the very close association between courage with readiness for aggressive action, and a fear which likewise came on with great intensity. If you study the reactions that occur in lower animals either from fear or from intense aggressive feeling, you will find that they are essentially the same. All the changes noted—increased heart beat, inhibition of the movements of the stomach and intestines, liberation of sugar from the liver, increased blood pressure—occur either in fear or in rage, so that basally the biologic changes are alike. And there is good reason why they should be alike, because in either case, whether there is fear present because of danger against which the organism has to defend itself, or whether there is aggressive feeling which will result in attack, the organism has to engage in a struggle, a struggle which may mean life or death to it and consequently will call for the mobilization of all its forces. So there is abundant reason why, under the circumstances referred to, these changes, all of which are favorable to the mobilization of the abilities and activities of the organism, should then occur as reasonably in fear as in anger or rage. James years ago pointed out the very close relation between fear and anger. He remarked that we both fear and wish to kill anything that may kill us. And it seems to me that if we regard these emotions and the instincts that are associated with them *biologically*, and apply the biologic concepts to the peculiar instances and circumstances that may arise in particular cases, we may often get an illuminating insight into their actual operations.

Dr. Tom A. Williams, Washington, D. C.: There is great confusion in this whole question. Of course, fear is a biologic reaction, of course, there is a physical mechanism, of course, we cannot arrest it by attacking the physical mechanism. Let us analyze the matter. There is first a reaction, what we call the manifestations of fear, physical and psychologic. The cause of that in all cases from the lowest biologic organism up to the human being is a sentiment, a feeling, an apprehension of danger. The cause of that is a concept always. Because of that concept there is a percept of the situation. It is because of what we fear that makes us fear. Then it is only by reason of the removal of the primitive active factor of the fear that we can remove the fear. We cannot remove the fear by dealing with the ultimate mechanism. Therefore, the question is a psychologic one, and we must find the active percept which in each particular case produces fear. But the same situation does not always produce fear in every individual. Why? Because in each there is a different set of conceptual processes causing fear, and it is those which we have to attack by exploratory analysis. The only exploratory analysis is not freudian analysis. People were cured of these troubles long before that doctrine was known.

Dr. Cannon has shown how it is the concept which determines fear in the lower animals. All of us who have taken the opportunity to examine committal cases have found this to be true, and the mechanism by which the deviation from normal reaction occurs we can call what we like. I call it suggestion, which simply means a false appreciation of the situation, a lack of placing the situation in its true relationship to life as a whole and to the individual himself. It is true that certain individuals are more apt to deviate in that way. We know that certain individuals are nervous, easily intimidated One reason is the physiologic tendency toward the fear reaction, and the other is the environment And it is this that we can, perhaps, influence We can get at the way in which this individual reacts by going back to the childhood influences and environment, and readjust the mental attitude toward life, by this means suppressing at the inception the reactions which would otherwise eventuate in fear Many cases of that kind have been published to show that these matters can be readjusted quite independently of the methods of the freudians It is only because the patient cannot explain all the things that create the fear It is not that he does not know that it is fear He does not call it fear, he does not recognize the similarity of the reaction to his fear, but when placed face to face with the psychologic features of his own case he recognizes them as not derived fundamentally from fear Hence even in Dr Patrick's cases I believe there is no really unconscious mechanism, in which respect I think we can part company entirely with the freudians

Dr Walter B Swift, Boston I have done work along this line in connection with stuttering In cases of stuttering we have found that a great many fears precede the utterance Those fears are manifested through the utterance where stuttering is present, and many times follow afterward The treatment that has been applied very successfully to these cases is what is called the supplying of a visual image By this I mean that during the stammering process the visual image, that is normally present in talking, is absent Therefore, by training these stutterers to visualize automatically during talking, their fear vanishes and their stuttering improves I think that these fears in a general sense often come from false instructions and from interpretations of older people who have drilled them into us in our early days Therefore it would seem that the general method of eliminating fear in these cases should be to supply automatic visual images Cure results

Dr. C B Burr, Flint, Mich It is true that those patients fear the unfamiliar, as Dr Patrick has said, but they also fear the familiar, as witness syphiliphobia A distinct delusional state occasionally is determined by harking back to a genuine or supposed infection

Dr. Foster Kennedy, New York I want to point out something which in the practice of psychanalysis comes under one's observation in the day's work That the whole theory of symbolism as enunciated by Freud, whether or not it be true, in the practice of the disciples of Freud, is used as mechanically as would be a set of chemical analytic tables The details of Freud's symbolistic theories are as ex cathedra as are the enunciations of Mary Baker Eddy, and are accepted equally implicitly by the followers of the two systems of thought In practice this has led not to the careful detailed personalized examination of the individual under consideration, but to a request for symptoms and their automatic pigeon-holing on a basis of preconceived data of purely pontifical character

Dr Francis Rhodes Fry, St Louis There is no place for the freudian intrusion in any serious sense in the practice of medicine and psychiatry It has been my observation that a phobia is often sustained by some point of irritation or distress in the patient's periphery, so to speak In that class of cases, particularly it does not do to remind the patient too soon that his trouble is psychic

In a recent paper on the anxiety neuroses, the peripheral as distinct from the psychic side of these cases was my chief theme Very often the fear patient has an anxiety based on a peripheral irritation constantly suggesting to his mind that something is wrong somewhere in his system It is well to work seriously to correct possibilities of this kind In other words to begin something that looks like a campaign in the patient's interests I have seen many patients affronted and driven away by the first interview with a practitioner, who has simply said, 'Nothing the matter' Of course, such practitioners are generally not good enough psychiatrists to grasp a situation of this kind

Dr. Charles R Ball, St. Paul I think we can say of the freudian doctrine that it has some elements of truth, but because of these few elements of truth it is not necessary for us to be compelled to swallow the whole thing I believe absolutely in Dr Patrick's and Dr Williams' exposition of this subject That correction must be along the lines of readjustment of the patient's ideas With these patients we should do as in other affairs of life, "Show them" And still that is not all, because there is a biologic factor It does not appear so plainly in the nervous cases as in the mental I remember the case of a man with manic depressive insanity and with a fear of suicide When I saw him his tongue was furred, he was losing in weight, there was lack of appetite, disturbed sleep, and he went on getting worse until one day while sitting in his office he did attempt suicide He made a vicious slash at his throat, cutting himself from ear to ear, and slashed the arteries of his wrists, but fortunately did not kill himself From that time on his fears left him, his tongue immediately cleared up, his sleep came back, and mentally he was himself again This case illustrates the biologic side—that there is something which brings about those conditions in addition to ideas I can recall a number of cases of this character where some great shock or perhaps some other fear has immediately relieved a manic depressive condition and suicidal tendency

Dr Ulysses Grant Darling, Chicago It appears to me that in the elimination of fear, whether it be in animal or in human being, the greatest point in the cure is to give the individual the experience of the feeling of safety It is not always necessary to be so very scientific or to follow after any particular hypothesis in the analysis of the individual It also appears to me that the doctor, whether from a scientific standpoint or from an artistic standpoint who is equal to the occasion at the moment of interview of discovering a method of giving his patient this experience, will have gratifying results In the analysis of any morbid fear it must be an analysis that reaches that particular fear, and then we must be capable of giving the treatment which, after a clear-cut diagnosis, will have a particular bearing on the case in hand

Dr David S Booth, St Louis I am unable to reconcile the view of the essayist on the treatment of fear with a fear which I will have to personally acknowledge in order to explain it I have a fear of snakes and lizards, which I know is unnatural, although I realize that there is no reasonable basis for this fear When a boy I had a classmate who carried them in his pockets and played with them and I know from knowledge of natural history that there are very few dangerous snakes Even the imitation wooden ones make me "creep," and I also had that kind of "snaky feeling" when I used the ordinary earthworm used in fishing Nothing of the kind has ever attempted to harm me, I have never been frightened with those things in any particular manner only in running onto them as boys naturally will in play But I will admit that I can hardly look at a snake or lizard until after the initial feeling of fear has passed off, when I am able to kill it I would like to have some freudian explain why I cannot get over this feeling

Dr Hugh T Patrick, Chicago Dr Aikin has handed me a written suggestion, as follows 'Please emphasize the value of personality and our complete analysis of each patient as an individual and not a machine, as one in 10 000 made in the same mold" I cannot make it any more emphatic than that To Dr Norbury, I can only say that because I omitted to discuss the psychology and the biology of fear, I do not wish to be understood as not being entirely in accord with him and Dr Cannon In my paper I speak of fear as one of the fundamental things in us and I illustrate the fact that we are controlled by our primitive emotions and appetites, not by reason, not by our intellectual processes at all In a way I have said that there is some physical cause to start this thing Of course, that might have been a transient physical something or it may have been a continuous physical something, and if there is a continuous physical something which the patient fails to interpret properly, naturally it perpetuates the fear And if we do not find out his error and correct it we have not done our duty Then there is the next step, which Dr Darling

In view of the muscular status and because the mother was of low mental type and offered no hope of cooperation in prism training, the boy was ordered plain 1½ degree prisms bases *in* in each eye For two weeks he was decidedly worse, then the vomiting suddenly stopped, and for three years, during which time he has gone through three school terms, there has not been the slightest return of the *reflex* This is one of the purest instances of a gastric reflex of ocular origin that it has been my privilege to study

Of the fifteen hyperphorias, two were simple vertical disturbances without lateral error

One was in a school girl, aged 14 years, who came wearing a perfect correction of her compound myopic astigmatism There was right hyperphoria of 2 to 3 degrees, varying from day to day. There was no diplopia to be elicited and there were no pareses of any of the vertical muscles A 1½ degree prism base *down* in the right eye relieved the vertigo and malnutrition from which she had suffered for five years In three years she has revealed latent hyperphoria so that now she wears a 3 degree prism base *down* in the right eye, and has completed her high school course in splendid physical condition

The other occurred in a girl, aged 7 years, with congenital paresis of the right superior rectus revealing itself as a paretic right hypophoria of 6 degrees When the eyes were rotated to the right, the left eye flew in and upward sharply The head was always characteristically tilted to the right This is the type of case on which Duane has laid so much stress because of the associated spasm of the inferior oblique of the fellow eye I have often felt in these cases that there was also spasm of the superior rectus of the fellow eye For instance, in this case of paresis of the right superior rectus, if the eyes are carried to the right, the superior rectus of the left eye (being a secondary adductor muscle) would throw in its quota of action, and with the left inferior oblique turn the left eye upward in spite of the action of the left inferior rectus, which would also try to assist in adduction

Nothing would better serve to illustrate the complicated character of what would seem to be simple ocular movements

As Dr Hansell and I[2] have continually urged, there is no one movement of the eyes in any direction in which one individual muscle is the sole performer An individual muscle may be the predominant actor, but never the sole actor

To return to our case history, the child had a 2 degree prism base *up* in the right eye incorporated in her refractive correction (a very low compound hypermetropic astigmatism) and was almost instantly relieved of her intense nervousness, night terrors and malnutrition

It is interesting to note that her tropometric readings were

	Up	Down	Nasal	Temporal
R	30	50	55	55
L	40	35	50	50

The mother was so distressed, however, by the occasional sharp upward deviation of the left eye that I finally reluctantly operated on the child, doing an advancement of the right superior rectus and a tenotomy of the left superior rectus One month later the tropometric readings were

	Up	Down	Nasal	Temporal
R	40	50	55	55
L	35	35	50	50

Two months later there was residual right hypophoria of 2 degrees, and there *is now* a 1 degree prism base *up* worn in the correction of the right eye But the up and in shoot of the left eye is no more in evidence, and the child is using her eyes hard at school The head tilting has also disappeared

If I have gone into considerable detail in the recital of this particular case, it is because it so perfectly illustrates the complex problem with which we are confronted in these instances of congenital palsy of the vertical muscles Each one must be solved for itself, and aberrant phenomena on the part of the muscles not impaired in their action must be rather expected

Of the remaining thirteen hyperphorias, six were associated with esophoria In one of them the esophoria amounted to 15 degrees, the hyperphoria 1½ degrees In this case the use of a 2 degree prism base *in* in each eye, and training of the ocular muscles, controlled the symptoms, and no attention was therefore paid to the vertical error

In the other five, the hyperphoria dominated the condition, varying from 2½ degrees in the lowest one to 12 degrees in the highest one Only one of these was paretic, and duplicated in most respects the lengthy case history just recited No operation was done, however, as the parents objected and the girl was made comfortable with vertical prisms alone, as were the other four

The seven remaining hyperphorias were associated with exophoria variant in amount

In one of them the hyperphoria equaled 3 degrees, but there was also exophoria of 15 degrees Vigorous prism training, begun with 5 degree prisms bases *out* in each eye, and carried up gradually to 20 degrees in each eye made the patient (a husky boy of 12) absolutely comfortable The vertical error was naturally disregarded

In three others the hyperphoria was low (not in excess of 1½ degrees), and prism training of the convergence, with weak prisms bases *in* for permanent wear, accomplished a complete cure, so that in these also the vertical error was ignored

In the remaining three cases, the hyperphoria became an insistent factor demanding especial attention

In a girl, aged 14 years, there presented an exophoria of 9 degrees and a left hyperphoria (nonparetic) of 5 degrees One degree prisms base *in* in the permanent correction and prism training of the convergence was of no avail A latent exophoria revealed itself gradually, so that finally there were 14 degrees of lateral error, her convergence viewpoint being 7 inches At this point, modified tenotomy of each externus and of the left superior rectus was done with resulting exophoria of 3 degrees and left hyperphoria of 1 degree Almost immediately a cervicobrachial neuralgia of five years' standing was completely relieved The girl was passionately fond of music, but could not practice more than half an hour without becoming dizzy and nauseated Today she spends hours at the piano without discomfort

In the second case, a bright boy of 12 had been almost a nervous wreck for three years and had never been able to do any continued school work, but had always had a tutor His exophoria was but 2 degrees for infinity and 6 degrees for the occupation distance His right hyperphoria of 6 degrees was not paretic A 3 degree prism base down before the right eye in his refractive correction transformed him in one year into a husky boy who could use his eyes for two hours at a time without the slightest discomfort, and after three years there has been no increase in the hyperphoria, or in the prism worn

In the third case, a boy of 8 had been intractable for a year He was choreiform, violent tempered and at night either walked in his sleep or had enuresis No diplopia could be elicited in spite of his 6 degrees of left hyperphoria, nor were there any other signs or symptoms of paresis of any of the vertical muscles In his eighth year he broke down physically and nervously at school At this stage a 4 degree prism was incorporated in his left glass, as his parents and family physician objected to the operation proposed In a year he had become a quiet, well poised boy of entirely different temperament, the outbreaks of temper had ceased, he no longer wet the bed at night, and he slept like a babe for eight hours every night

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[2] Hansell, H F, and Reber, Wendell Ocular Muscles, Ed 2, Philadelphia, P Blakiston, Son & Co, 1912

The latter two case histories sound almost too good to be true, but they have convinced me of the power of an uncorrected vertical error in a child to alter their character and perhaps their whole career entirely They also illustrate the fallacy of expecting a refractive correction alone to set aside all strain of visual apparatus in children So insistently and dogmatically has this doctrine been laid down by our authorities and teachers, that I wish here humbly to protest against what to me seems an incomplete and unjust method — incomplete in that it does not reckon all the possible factors in a given case, and unjust to the children whose futures hinge so much on the state of their visual apparatus

SUMMARY

Three esophorics out of eight were made comfortable on weak prisms, bases *out,* in their permanent correction

Five other esophorics had hyperphoria and wore vertical prisms Three of them were cured by this method, one was improved and one was not helped a bit

Eleven exophorics out of twenty-four were made entirely comfortable on prism training alone plus the wearing of their respective corrections when needed

Three more had prisms of from 1 to 3 degrees, bases *in,* incorporated in their regular correction, and also needed prism training to complete the cure

Three more had permanent prisms only in their corrections, as nothing could be hoped for from their parents in the matter of cooperation

Seven had hyperphoria, of which number, two improved so much on training of their convergence as to render lateral vertical prisms unnecessary

The other five had sufficient vertical disturbance to compel attention and were treated from that standpoint

Of fifteen hyperphorics, two were paretic One was operated on successfully, and the other quite as successfully treated with vertical prisms

Five of them became so comfortable on prism correction of the lateral error that the vertical imbalance was ignored

Eight of them were intrinsic nonparetic hyperphorias that called for prism intervention, and all of the eight are wearing vertical prisms, six being completely cured and the remaining two in a fair way to live up to the visual requirements demanded by modern education

No esophorics came to operation

Two exophorics came to operation

Two hyperphorics came to operation

CONCLUSIONS

1 Heterophoria in children is in a certain proportion of cases an entity which must have some kind of attention

2 Painstaking consideration of all the general physical factors is most imperative

3 Thoroughgoing correction of the refractive status is imperative, but in some cases it is merely "first aid"

4 Esophoria when intrinsic will probably be best met with weak prisms (from 1 to 2 degrees), bases *out,* plus lateral rotation exercises

5 Exophoria when intrinsic will often respond to training alone, frequently will need prisms, bases *in* (from 1 to 2 degrees) for permanent use, and rarely comes to operation

6 Hyperphoria when intrinsic almost always demands vertical prisms of from one third to one half the total infinity deviation, and when paretic will more frequently than any other muscular anomaly justify operative interference

1212 Spruce Street

ABSTRACT OF DISCUSSION

Dr George H Price, Nashville, Tenn Heterophoria in children is a condition we are not called on to investigate very frequently because many people think that trouble about the eyes of children is simply a manifestation of temper or a subterfuge to avoid school work But children do suffer from heterophorias, as is evident from the report of Dr Reber He called attention to an observation I, too, made sometime since, namely, infants never look at you An infant always looks into the distance The child in early infancy must learn to converge, just like it learns to take hold of an object Those acts which in early life are reflex in nature, by education and training later become automatic or intentional In the 345 cases reported by Dr Reber, he found thirty-five cases of intrinsic heterophoria Of this number, eight, or about 23 per cent, were esophoric, twenty-four, or nearly 70 per cent, were exophoric, and fifteen, or nearly 43 per cent, were hyperphoric I am inclined to think that some of the esophoric cases must have been pseudo in type depending on hypermetropia, which, when corrected, would be relieved In the exophoric cases if myopic, correcting the defect would in many cases give relief, but if hypermetropic, it is in all probability a pseudo type, if so, resort to exercise of the ciliary muscle is indicated, but if the exophoria is high in degree and resists the exercise, it will require an operation on the strong rectus externus to give relief He reports quite a large number of cases of hyperphoria This is always intrinsic, and if the degree is excessive and cannot be overcome by prisms or properly decentered lenses, then resort to operation is the only course open for relief What was the average age?

Dr Reber Nine to fifteen

Dr Price A little early in some, for purely conjugative functions to dominate and control, but they show conclusively that these children had not had their ciliary muscles trained up to fullest efficiency or capacity, therefore when the necessity arose to use them continuously they failed to perform their proper functions In these cases Dr Reber has reported only two operations The presumption is, therefore, that he found only a small number which could not be increased in efficiency by exercises, after correction of the defects in vision where it was necessary to decrease the tonicity or strength of the particular offending muscle, therefore he resorted to operation I was glad he called attention to the lateral method of exercise, or wall to wall movement for the lateral muscles This can also be applied to the superior and inferior recti muscles, by the ceiling to floor exercise Thus we can exercise and strengthen all the recti muscles when they are reduced in tonicity In the cases followed up it had a very beneficial effect It is quite evident that we frequently overlook these conditions

Dr Albert E Bulson, Jr Fort Wayne, Ind Exceptions may be taken to the statement that heterophoria in children is a reasonably rare anomaly, for if children are tested carefully for muscle imbalance it will be found that heterophoria is rather common I can however agree with the statement that in a very large percentage of cases a good refractive correction and suitable attention to the general physical condition causes a correction of the heterophoria or at least a sufficient portion of it to give perfect relief from all symptoms referable to the eyes In my experience it has been the children of highly neurotic temperament and those in ill health or suffering from bad hygienic regulation that have required the wearing of prisms to correct a small amount of heterophoria but I do not believe that prisms should be added until after the patient has worn the full correction constantly for a sufficient time to obtain the effect of it, and that in addition to this the case has been given such general attention as seems indicated

A further point that I would emphasize is the necessity of very painstaking correction of the refractive error under atropin cycloplegia In my own experience it has been the hyperphoria that has given most trouble in children, and I have rarely found it necessary to correct either exophoria or esophoria with prisms My experience in the use of muscle exercises in children has not been satisfactory in view of the difficulty in obtaining sufficient cooperation on the part of the patients

Dr G C Savage, Nashville, Tenn Dr Reber says that eyes with two degrees of esophoria in the far and two degrees of exophoria in the near are the most comfortable This cannot be so Orthophoria, both far and near, is beyond all question the most desirable of all ocular muscle conditions Eyes with two degrees of esophoria for distance would see double, the false and the true objects being two degrees apart, if it were not for the demand made on the right and left fourth basal centers, compelling the external recti muscles to overcome the esophoria This diplopia would, of course, be homonomous The same eyes showing two degrees of exophoria in the near would have crossed diplopia, the false object being just two degrees from the true, if it were not for the activity of the right and left third basal centers compelling the interni to counteract the two degrees of exophoria In orthophoria for distance and near no basal center would be called into action in the straight forward look It can readily be seen that there is a difference between orthophoria and heterophoria, and that difference is very much, and always in favor of orthophoria For cases of exophoria, and I suppose he would also include cases of esophoria, Dr Reber advises "wall-to-wall" exercise "Wall-to-wall and ceiling-to-floor" exercise is applicable only to cases of asthenic orthophoria It certainly would be incapable of curing any form of heterophoria The practice of putting at rest the ciliary muscle in the eyes of young people, for refractive purposes, is correct, for there is no other way of knowing just what work the tenth conjugate center must do in its effort to control the ciliary muscles in the interest of sharp vision Any effort on the part of this center is associated with a corresponding effort on the part of the third conjugate center, which produces a pseudo-esophoria, the quantity of which can be known after the refraction has been determined Even in young people the strength of the lens determined under a cycloplegic is not, necessarily, the lens to be prescribed in a given case Those who advocate "no mydriatic" will live to a day when they will see the folly of such claim The claim is not only unfounded, but it is one of the sweet morsels which opticians roll under their tongues Under such delusion refraction work is at best only guess-work

Dr Wendell Reber, Philadelphia As to Dr Price's remark about exercises, I may say that prism exercises in hyperphoria have always been in my hands a lamentable failure I have only succeeded in aggravating the symptoms The ceiling to floor rotation exercise is of value The idea of operation in the hyperphoria of children is mostly foreign to our office In one of these cases I operated of my own volition, in the other I was forced to operate The vertical prism is the one we can prescribe with the greatest assurance of comfort to the patient I can only endorse what Dr Bulson has said Of course I want it distinctly understood that these cases of muscular error which I have recorded are cases in which the muscular symptoms called for attention when the refractive correction had not done its work That is the point of the paper Only one in ten were considered worth treating on a muscular basis, nine out of ten were made comfortable by the refractive correction alone I believe the refractive correction should be worn at least six months before prismatic correction is attempted As to esophoria of two degrees in the distance and exophoria of two degrees in the near, those who make careful investigation of these patients will find that they are the people who have the greatest comfort in using their eyes As to so-called asthenopic orthophoria, if a patient has orthophoria and shows weakness of all the ocular muscles, they have not asthenopic orthophoria, they have a general myasthenia and need an allwise general medical practitioner and not an oculist

BLOOD TRANSFUSION

WITH SPECIAL REFERENCE TO GROUP TESTS*

WALTER V BREM, M D
LOS ANGELES

Since Moss[1] published in 1910 his remarkable studies of iso-agglutinins and isohemolysins, we have been working continually with these interesting bodies, and have applied the principles established by him to the practical work of transferring blood to patients suffering from various conditions The work of Moss was so accurate and complete that during six years we have never found in it a flaw, nor have we been able to add anything essential to it Our only addition is that we have been able to modify the technic of blood grouping so that it can be done easily and accurately within a few moment's time, and in this we have but applied Moss' principles of blood grouping to a microscopic method Moss found that all normal and pathologic bloods alike could be classified into four groups by agglutination tests of the serums against the corpuscles These groups are

Group 1 (10 per cent) Serum does not agglutinate any corpuscles Corpuscles agglutinated by the serums of Groups 2, 3 and 4

Group 2 (40 per cent) Serum agglutinates corpuscles of Groups 1 and 3, not 2 or 4 Corpuscles agglutinated by serums of Groups 3 and 4, not 1 or 2

Group 3 (7 per cent) Serum agglutinates corpuscles of Groups 1 and 2, not 3 or 4 Corpuscles agglutinated by serums of Groups 2 and 4, not 1 or 3

Group 4 (43 per cent) Serum agglutinates corpuscles of Groups 1, 2 and 3, not 4 Corpuscles not agglutinated by any serums

It may be seen that no serum agglutinates corpuscles belonging to its own group, and furthermore, that if one has a known Group 2 or Group 3 blood, he can determine the group of any other blood by testing the known serum against the unknown corpuscles, and the unknown serum against the known corpuscles As Moss thought, we have found that the group reactions of any one person appear to be permanent characteristics, inherited, and that they probably follow the mendelian law In 1910, my associate, Dr A H Zeiler, and I found that our bloods belonged to the reciprocal Groups 2 and 3, respectively, and in tests made many times during six years, there has been no change in the group reactions We have been able, therefore, to use either one of our bloods in determining the groups of unknown bloods

Moss found, further, that isohemolysins, when present, always followed the group reactions of iso-agglutinins, but that while iso-agglutinins are always present with isohemolysins, the contrary is not true, and that isohemolysins are not always present with iso-agglutinins Isohemolysins *cannot* be used, therefore, in determining blood groups The isohemolysins may even interfere with the group determination, for strong isohemolysins may break up the agglutinated corpuscles so rapidly that they may mask the agglutination reaction This source of error must be guarded against, especially in using the microscopic method to be described We ourselves were led once into error by the phenomenon, and the result of the transfusion was most alarming

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* From the Clinical Laboratory of Brem, Zeiler and Hill

* Read before the Section on Practice of Medicine at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June, 1916

[1] Moss M L Isoagglutinins and Isohemolysins, Bull Johns Hopkins Hosp, 1910, xxi, 63

The possibility of such an error arising can be obviated by using the antihemolysin which Moss found constantly present in the serum of the blood whose corpuscles are hemolyzed by a serum belonging to another group If a little of the antihemolytic serum is mixed with the preparation of corpuscles and serum to be tested, it will prevent hemolysis, and the agglutination will proceed without interference, as serums contain no antiagglutinins

Another precaution that must be observed is that the known Group 2 or Group 3 blood which is used for determining the group of another blood must contain in the serum strong agglutinins The strength or quantity of agglutinins varies in different serums even of the same group, and we were led into serious error on another occasion by using a known Group 2 blood, which was weak in agglutinins, for determining the group of a donor The known Group 2 corpuscles were not agglutinated by the donor's serum, and the known Group 2 serum apparently did not affect the donor's corpuscles, that is, the donor apparently belonged to Group 2, which was the group desired for transfusion The reaction which resulted in this instance, also, was most alarming Afterward we regrouped the donor's blood with another Group 2 blood and found that the known Group 2 serum agglutinated the unknown corpuscles, and that the unknown serum did not agglutinate the known Group 2 corpuscles, that is, the donor's blood belonged to Group 1 and was unsuitable for the transfusion

In view of these facts, the technic and rationale of the method of blood grouping which we use can be easily understood

Let *II* represent a known blood belonging to Group 2, and x a blood the group of which must be determined Five or 6 drops of *II* blood are collected in a small clean dry test tube or centrifuge tube, and 1 or 2 drops, according to the size of the drops, in another tube containing 1 c c of 1 5 per cent sodium citrate in 0 9 per cent salt solution which gives one approximately a 5 per cent suspension of corpuscles The percentage does not have to be exact The x blood is collected in the same way in two similar tubes The bloods in the dry tubes are allowed to coagulate, the coagulum is loosened from the side of the tube with a platinum wire, and the tubes centrifugalized to separate the serum Serum and corpuscles are now ready for the tests Platinum loopfuls of serum and corpuscles are placed on coverslips, which are inverted over an ordinary cell slide rimmed with petrolatum Two loopfuls of serum are used and one of corpuscle suspension The slides are gently rolled from side to side to agitate the corpuscles in order to bring them into contact with each other Agglutination, if it occurs, takes place at room temperature within five minutes It can usually be detected with the naked eye showing as brick red particles, but should be examined, also, with the low power objective of the microscope Rouleaux formation of red corpuscles must be differentiated from small clumps due to agglutination

ILLUSTRATIONS OF GROUP DETERMINATIONS (THE FIGURES REFER TO LOOPFULS)

2 *II* serum + 1 x corpuscles = agglutination
2 x serum + 1 *II* corpuscles = 0

Group 2 serum agglutinates the corpuscles of Groups 1 and 3 only But Group 3 serum agglutinates the corpuscles of Group 2, which does not happen in the foregoing test with x serum and *II* corpuscles The x blood does not belong therefore, to Group 3, but must belong to Group 1

2 *II* serum + 1 x corpuscles = agglutination
2 x serum + 1 *II* corpuscles = agglutination

Each serum agglutinates the other corpuscles, so the two bloods belong to the reciprocal Groups 2 and 3, that is, the x blood belongs to Group 3

2 *II* serum + 1 x corpuscles = 0
2 x serum + 1 *II* corpuscles = agglutination

Group 2 serum does not agglutinate Group 2 or Group 4 corpuscles, while it does agglutinate the corpuscles of Groups 1 and 3 The x blood belongs, therefore, to Group 2 or Group 4 Which one is determined by testing x serum against *II* corpuscles, which it agglutinates A serum does not agglutinate corpuscles belonging to its own group, so the x blood does not belong to Group 2, but must belong to Group 4, the serum of which does agglutinate Group 2 corpuscles

2 *II* serum + 1 x corpuscles = 0
2 x serum + 1 *II* corpuscles = 0

The x blood belongs to the same group as the blood used for testing, Group 2

COMMENT ON THE METHOD

This method of determining the group of an unknown blood requires not more than fifteen minutes after the bloods are obtained, and only small quantities of blood, such as can be obtained from a puncture of the finger tip, are necessary The masking of agglutination by hemolysins is prevented by the serum, containing antihemolysin, that is present in the citrate-salt-corpuscle mixture This serum, if not present in sufficient quantity to prevent hemolysis, at least delays hemolysis so that agglutination is not masked Neither the presence of this serum, nor the citrate interferes with agglutination, and hemolysins can be disregarded

The assertion of some authors that hemolysins can occur without agglutinins, and that, therefore, a test for hemolysins as well as agglutinins must be made, is based, without doubt, on the fact that in the tests with washed corpuscles suspended in salt solution, hemolysis can cause such a rapid breaking up of clumps of corpuscles as to mask agglutination In order to detect agglutinins in these bloods, the preparations must be watched with care microscopically during the first few minutes after the serum and corpuscles have been mixed I have seen complete hemolysis of corpuscles in salt solution occur in the test tube within five minutes, leaving, of course, no trace of agglutination But marked agglutination occurred immediately in the microscopic preparations, or in preparations which contained some of the serum of the blood to which the corpuscles belonged The quantity of the antihemolytic serum necessary to prevent hemolysis probably varies widely according to the strength of the hemolytic serum The hemolytic action of one serum was not inhibited by the presence in the test of 2 5 per cent of the antihemolytic serum, but 11 per cent partially inhibited hemolysis One loopful of antihemolytic serum added to the test mixture of two loopfuls of serum and one of washed corpuscles (making a 25 per cent solution of the antihemolytic serum) has always inhibited hemolysis, and it is a safe plan to introduce this element into the test

The hemolysis with hemoglobinuria which has occurred from transfusions with ungrouped bloods is explained by the dilution of the antihemolysin in the donor's serum, the dilution being great enough to leave the introduced corpuscles unprotected or but partially protected It is probable that hemolytic serum introduced in a transfusion never causes hemolysis of the patient's corpuscles, for in such a case the hemolytic serum is diluted, while the antihemolytic elements of the patient's serum remain relatively concentrated The agglutinins, also, may be diluted beyond the point of danger by the patient's serum If, therefore, it is necessary in an emergency to give a patient blood belonging to a different group, the corpuscles should not be agglutinated or hemolyzed by the patient's serum, as pointed out by Ottenberg[2] Bloods of Group 4 answer this requirement for all the other groups, and, fortunately, Group 4 is the most common group, Moss having found that 43 per cent of all bloods belong to it

TRANSFUSIONS

It is not within the scope of this paper to discuss the indications for transfusion, the results and the reactions This ground has been covered recently in a thorough manner by Ottenberg and Libman,[3] and our observations, in the main, agree with theirs We have given 191 transfusions — 165 of defibrinated blood, nine of 1 per cent citrated blood, eleven of 0 2 per cent citrated blood, and six of whole blood by the syringe-needle method Our widest experience has been with pernicious anemia — eighty-two transfusions to twenty-four patients, one of whom received twenty transfusions Our most successful transfusions have been in cases of secondary anemia due to hemorrhage, and preceding operations We have had reactions in about 25 per cent of the instances These generally consisted in the ordinary chill and fever, and were usually mild Severe reactions occurred four times after transfusions of 1 per cent citrated blood (Weil[4]) The temperature of one patient reached 106 F, and remained elevated for about a week Two other patients died a few hours after, but it is fair to say that these patients were moribund at the time of transfusion However, we feel that 1 per cent citrated blood is toxic, is dangerous, and is unnecessary Lewisohn's[5] method of giving 0 2 per cent citrated blood seems safe, and this quantity of sodium citrate is sufficient to prevent clotting Three anaphylactoid reactions occurred, two, at least, being in patients having active advanced tuberculosis These are a study in themselves and will be discussed in a future paper

The reactions which concern us chiefly at present are those associated with "incompatible bloods," that is, cases in which the donor's blood does not belong to the same group as the recipient's blood

There were twelve such instances in our series In seven instances the donor's serum was agglutinative for the recipient's corpuscles, but the recipient's serum was not agglutinative for the donor's corpuscles There were no reactions suggestive of wrong grouping, though two of the patients had the ordinary chill and fever following The absence of "group reactions" in the cases coincides with the view previously expressed that when agglutinative and hemolytic serum is introduced into a patient, the serum is so diluted by the patient's serum and the latter contains such an excessive quantity of antihemolysin that no "group reaction" should result The reaction of recipients to donors in these seven instances was as follows

Four Group 2 patients were given blood from Group 4 donors

One Group 1 patient received three transfusions from Group 2 donors

An eighth patient, belonging to Group 3, was given 100 c c of whole blood from her husband, who belonged to Group 2 The blood was transferred immediately with syringes while the patient was under an anesthetic There was no reaction, but a "group reaction" might have been masked by the ether anesthetic Each of these serums was agglutinative for the other corpuscles

In the four remaining instances, the bloods bore the following relations

Two Group 4 patients received Group 2 blood
One Group 2 patient received Group 1 blood
One Group 3 patient received Group 1 blood

Three of these patients had violent reactions coming on immediately after the injection of only a small quantity, from 10 to 70 c c, of blood One of these had marked hemoglobinuria The fourth patient had a mild reaction during the transfusion, which, however, was completed, 550 c c of blood being given It was found later that this patient's serum was only weakly agglutinative to the corpuscles injected, and this fortunate fact probably explains why the reaction was mild All of these patients recovered, and had no trouble with later transfusions

An analysis of the causes of the transfusions of blood belonging to wrong groups shows that twice it was done because of emergency cases, three times because no Group 1 donor could be obtained for the patient who belonged to that rare group, and the other seven times it occurred through an error made in group testing, errors that can now be avoided In none of the 179 instances of transfusions in which proper groups were used was there hemoglobinuria or "group reactions"

GROUP REACTIONS

These reactions are quite typical and come on quickly as a rule after the transfusion is begun, sometimes only 10 c c of blood being needed to precipitate the onset There is a feeling of fulness in the head, suffusion of the face and eyes, precardial distress, dyspnea, coughing, backache, rapid and small pulse which may become imperceptible at the wrist, and sometimes complete loss of consciousness, and convulsions Hemoglobinuria may occur The shock is very much like the anaphylactoid shock, only, in our cases, the urticarial rash of the latter was absent According to the views of Jobling and Petersen[6] and Bronfenbrenner[7] on tryptic shock, the conditions here are ideal for the anaphylactic phenomenon The corpuscles introduced may be considered the antigen, and the hemolysin (which is an amboceptor-complement hemolysin) as the antibody The union of antigen and antibody may cause the adsorption of antitrypsin, and the products of trypsin digestion of the patient's own serum may cause the shock

CONCLUSION

The practical working out of our group tests and method of transfusions has proved most satisfactory We have determined the groups of numerous donors and have made Wassermann tests on their bloods Our laboratory keeps in touch with these donors, who are glad to give several hundred cubic centimeters of their blood for a small sum of money They come to the laboratory, and, by the needle and vacuum flask method, we withdraw the quantity of blood desired having first cocainized the skin over the vein Some of these donors have been used many times during four years They lose no time from work, the procedure is practically painless, they feel that the money is easily earned, and the patient is under no obligation to the donor Having our donors classified and knowing their Wassermann tests are negative, we are in a position to give transfusions quickly A group test of the patient's blood requires only a few minutes after the blood is obtained, and then we can summon the correct donor The method is simple and easy for every one concerned, and the results, as far as I can judge from the literature, are as satisfactory as from other methods of transfusion The defibrinated or citrated blood is injected intravenously through a needle without previous incision of the skin The skin is cocainized at the time of injection

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[2] Ottenberg, Reuben Studies in Isoagglutination, I, Transfusion and the Question of Intravascular Agglutination, Jour Exper Med, 1911, xiii, 425

[3] Ottenberg, R, and Libman, E Blood Transfusion, Indications, Results, General Management, Am Jour Med Sc, 1915, cl, 36

[4] Weil, Richard Sodium Citrate in the Transfusion of Blood, The Journal A M A, Jan 30, 1915, p 425

[5] Lewisohn, R The Citrate Method of Blood Transfusion in Children, Am Jour Med Sc, 1915, cl, 886

[6] Jobling, J W, and Petersen, W Mechanism of Anaphylatoxin Formation, Jour Exper Med, 1914, xx, 37

[7] Bronfenbrenner J The Mechanism of the Abderhalden Reaction Jour Exper Med, 1915, xxi, 221

ABSTRACT OF DISCUSSION

Dr Richard Lewisohn, New York I agree thoroughly with Dr Brem's remarks about the toxicity of Weil's dose, in fact I was the first one to show that citrate of soda mixed with blood at the 1 per cent ratio is extremely toxic when used in large transfusions The general applicability of citrate of soda for blood transfusions, and the perfect safety of its use is based entirely on the small dose (0 2 per cent) I have used the method in seventy-five cases, 20 per cent had a rise of temperature above 101 F, and 10 per cent had a chill The clinical effect of the transfusions was not impaired by these reactions I wish to sound a note of warning against the storage of the blood, or against the transfer of citrated blood from house to house I have used this method of transfer in two transfusions and had a severe reaction in both of them After all we know very little about biologic changes in blood which is kept in storage

Dr George R Minot, Boston At the Massachusetts General Hospital we have made use of the groups for testing donors for transfusion Our results are quite in accord with those of Dr Brem I have found the use of unwashed citrated suspensions of cells of advantage in the microscopic iso-agglutination tests I have also made use of the fact, that given serum and cells of a known Group 2 or 3, one can determine to what group an individual belongs Dr Moss told me that recently he found that the individual's group is often not established at birth, but that it is established in 85 per cent of children between 1 and 2 years of age though it may not be established completely until 10 years of age or more Thus in testing children's blood it is perhaps better to use a direct test between donor and patient rather than the group method

Dr F G Novy, Ann Arbor, Mich There is one thing that needs to be emphasized in view of the statement that the poisonous effects at times following the injection of serum resemble those of anaphylactic shock. I wish to make the statement even stronger and say that normal serum is always poisonous and that the symptoms do not merely resemble but actually are those of anaphylactic shock We used to think that serum was harmless and that it could be injected as freely as water, that is, salt solution Such, however, is not the case since simple animal experiments show that normal serums are toxic The effects produced depend on the dose employed, and also on the method of preparing the serum Thus, a serum made by defibrinating with beads is considerably more toxic than one prepared by simply whipping with a glass rod As regards the use of whole blood, it should be realized that the same danger exists, and is even greater since whole blood may become, in a short time, even more toxic than serum Thus, to illustrate this statement, it may be said that 10 c c of blood drawn from a rabbit and injected intravenously into a guinea-pig with the least possible delay will produce little or no effect On the other hand, if such blood is kept in the syringe for three minutes and is then injected, it will kill in a dose of 2 c c A typical, acute anaphylactic shock is the result In other words, whole blood is more toxic the nearer it is to the coagulation stage This toxicity has nothing to do with clot itself The use of citrated serum, as pointed out, has its dangers which are more pronounced the longer it is kept It can easily be shown that the incubation of a citrated serum results in the production of increased toxicity That serum is something more than a harmless fluid should be recognized and not lost sight of in the future

Dr Abraham Jacobi, New York Dr Novy, when the serum is injected into the spinal canal is the effect as poisonous as when it is injected in the usual way?

Dr Novy I have had no experience in that line My experiments have been made intravenously

Dr Walter V Brem, Los Angeles Dr Lewisohn suggested that it might be a dangerous procedure to withdraw blood from a donor and carry it to another place for injection into the recipient, that some alteration in the blood might occur We have done this in nearly all of our transfusions, and have not been able to attribute special reactions to it We have transported the blood as far as seventy miles without reactions ensuing

Dr Novy said that serum and whole blood were deadly poison I do not doubt that Dr Novy can make them so by his physical methods of treating them, but these procedures do not appear to be reproduced in the technic of our transfusions, and the mild transfusion reactions that not infrequently do occur do not appear to interfere with the good results from the transfusion It would seem, therefore, that these animal experiments of Dr Novy do not weigh heavily against the results obtained in our method of transfusion of human beings, such transfusions having in themselves experimental value However, Dr Novy's work may throw light on some of the reactions and enable us to eliminate them

I agree with Dr Novy that the reactions I described as "group reactions' are true anaphylactic phenomena, but I felt that "anaphylactoid" would be the better word at present, for there is too great a tendency abroad to use loosely the term "anaphylaxis

THE ETIOLOGY OF NONPARALYTIC OCULAR IMBALANCE

SOME ORIGINAL CONCEPTIONS AND INTERPRETATIONS BASED ON THE PHYSIOLOGY AND PSYCHOLOGY OF OCULAR MOVEMENTS[*]

WILL WALTER, M D
CHICAGO

In the presession volume of last year's meeting, in a paper published in the March issue of Knapp's *Archives*,[1] I laid the foundation for a new consideration of this still clouded problem by a critique on paralytic types of ocular muscle imbalance

That was a serious effort to get a new point of attack on the problem, and this discussion is a follow-up one It is the hope that the value of considering the question from the standpoint of levels of control will be hereinafter apparent

In the above-mentioned critique on paralytic types and by virtue of a close study of clinical pathology, certain fundamental points were demonstrated, and evidences in the recent literature were cited in proof of levels of control of the ocular movements[2]

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[*] Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Walter Will Clinical Pathology of Ocular Muscle Paralysis Arch Ophth xlv 172

[2] This grouping is one which might well be regarded from the standpoint of evolution since in the lower forms where the eyes move independently (Fuse Abducens Nucleus of Mammals Ztschr f Augenh xxix 175) and without coordination we find only the first level nuclei in a second group we find evidence of combined use of eyes—some coordinated movements and with it coincident evolution of joint control—but only in higher forms is this perfected and only in highest forms does it carry the added attribute of convergence coordination

These so-called levels of control are in the light of present knowlege quite accurately oriented for the high or third, and first or low levels Evidence is only now, and as the result of pathologic findings, accumulating and is only approximate as to the midlevel, but it is not necessary to our view to know the sites of these control areas if we may exclude the high and the low levels from the consideration

The high or third level or that of voluntary control, by virtue of which we may perform associated movements of convergence, of dextrovergence, sinistrovergence and sursumvergence in response to will, is beyond doubt in the frontal lobes Its control centers (at the foot of the second frontal convolution) do not, however, respond to optical, acoustic or tactile impressions[3]

This level of control does not, if my conception is correct, enter into the etiology of nonparalytic imbalance Neither are we concerned primarily with the first or low level control of individual muscles The nuclei for these are too well understood to require further description We want only to emphasize the special or *individual nature of their actions*

The ocular muscle does, then, what it is stimulated to do — contracts in proportion to its stimulus The relay stations, wherein the amounts of stimuli are apportioned to the individual muscles, are what we term the second level control There is a difference between *the will* — the initiating mechanism in its broadest sense (frontal cortex), and *the way* or the subconscious reflex coordinating mechanism (occipital cortex) which goes on independent of volition If we do not accept this, even though we cannot locate the control centers accurately, we have no basis but empiricism for the use of prisms for exercise or orthoptic training of any sort, or prescribing of convex lenses to lower the impulses to convergence or concave lenses to stimulate them, or prisms for wear, or cycloplegia or any of the means we employ in the management of these cases All of these measures operate beside volition and in a purely reflex way

Nor is this level of control limited to retinal impulses With it are included impulses from tactile, olfactory, auditory and other sense stimuli

All of these are responses to environment for the satisfaction of the fundamental things of life, as attack and defense, and satisfaction of hunger and thirst, and such stimuli are fundamental, automatic, mechanistic phenomena and are quite independent of high level — voluntary — control

This is evident from the experimental removal of the frontal lobes or their dissociation,[4] since these reflexes remain still in action

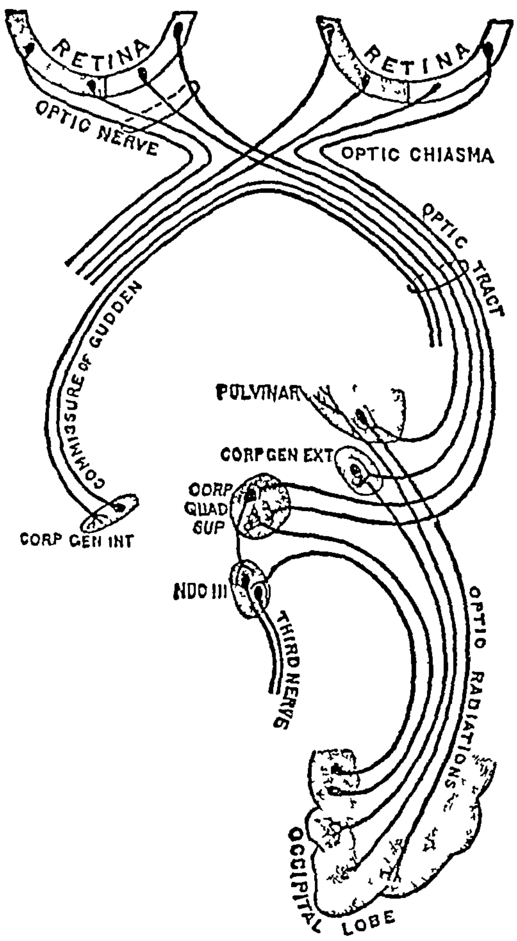

Fig 1 — Diagram of "midlevel' connections of the optic nerve and optic tract (from Fisher)

So, as I concluded in my paper of last year,[1] voluntary impulses (volitional control) and reflex stimuli through the vision (retinal impulses) are probably independent

This intensely specialized reflex control[5] is a system and not an area, and is what we call in its entirety the second level of control, and this is the level concerned in the phorias and the tropias But let us in view of the lack of definite localization of control areas of associated movements in this midlevel speak of them henceforth as coordinations They are known to lie largely in the occipital lobes[6] That they are *not* individual muscle nuclei is evident from the investigation of many observers[7] The view that the individual muscle is ever alone in action is not supported by anatomists or physiologists or by analogy Latterly, Sufta,[8] employing his new ophthalmotrope, proved that in no movement of the globes were there less than three muscles employed This means that delicate coordinations — apportionment of impulses — are necessary for even the simplest ocular movements

As Landolt[9] has recently again emphasized, the many generations of association of accommodation and convergence have tied these functions so together (phylogenetic association) that errors or weaknesses of one must show in the other function This interassociation is the basis of all of our study, and whether appreciated or not, the literature of the phorias and the tropias is made up of efforts to search out the reflex nature of this interdependence

Second level control is, then, that grouping of centers which is tied up with the retinal stimuli, the ciliary activity, and in general the automatic system which goes on regardless of volition or conscious effort and which is effective just in proportion to its freedom and sureness of action

If defective at any segment, the mechanism is slower and more labored, and the individual is not up to normal in his reactions, or if he is, *it must* be at unusual expenditure of neuromuscular energy In any event, he is inefficient and it is immediately apparent that the defect is far reaching on his response to environment

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[3] Freund Paralysis of Vertical Movements, Neurol Centralbl, xxxiii, 1215

[4] Shafer Proc Roy Soc, London, 1888, xliii

[5] See Roux (Neurol Centralbl, xxxiii, 1225) and Durand and Jaquet (Reflex Conjugate Rotation of Eyes, Limousin, med xxxvii, 157) for tactile reflex stimuli, and for auditory, the centers for which lie in the temporal lobe, see also de Kleign (Ocular Muscles Reflex and the Ear, Nederl Tijdschr v Geneesk, 1915, p 1835, Arch d'ophth, xxxiv, 780), *Hageman (Ocular Manifestations* of Aural Disturbances and Their Interpretation, Med Rec, New York, Jan 16, 1915) and particularly ~~a~~ recently reported case wherein by a quick movement of *the head and hence stimulation over* the auditory tract, the patient is able to overcome a paralysis of lateral movements, the eyes following the object to the extreme limits of rotation as soon as, under the influence of the auditory impulse, the motion was started

[6] Darkschewitsch Ueber den oberen Oculomoriuskern, *Anat* u Phys Anat Abth, 1889 Farnariere Diphtheritic Paralysis of Accommodation, Ann di ottal, xlii, 572, Clin Ophth, xix, 489 Fisher, J Herbert Ophthalmological Anatomy, Ophth Rev, 1904, pp 13, 23, 126, 130 Howell Proc Roy Soc, London, 1896, American Text Book of Physiology, 1896, p 684 Freund (Footnote 3) Burkholder *Neurology* of Fusion Faculty, Ophthalmology, x, 592 Ferrier and Turner, Aldren Functions of the Brain 1876

[7] Fisher Ophth Anat, 1904

[8] Suffa A New Ophthalmotrope, Jour Ophth and *Oto Laryng*, xxi, 245

[9] Landolt Arch d'ophth, xxxiv, 416 466 529

We may *will* whether we enter into the hunt, but the eye will follow the game in a purely reflex way under stimuli from visual, auditory and other sense organs (mechanistic stimuli), and the influence of the will is limited rather to initiating and inhibiting the mechanism In fact, it takes often so much voluntary effort to inhibit these reflex stimuli that men have been lost in the pursuit One may will to look to the right or left or up or down, but when a sudden impulse, as through a sharp sound (auditory stimulus), a blow (tactile stimulus) or an ominous odor (olfactory stimulus), reaches the central areas, the response is a reflex, a turning of the eyes toward the stimulus, searching movements — more rapid than volition because fundamentally protective and mechanistic These are second level acts, they are as automatic as the usual winking of the eye, and they are surer than when volitional control is called out The reaction time as between the frontal and occipital control has been measured by Shafer,[4] who found that the former was several hundredths of a second slower than the latter The individual who would depend on volitional control would be handicapped and would lose in the contest

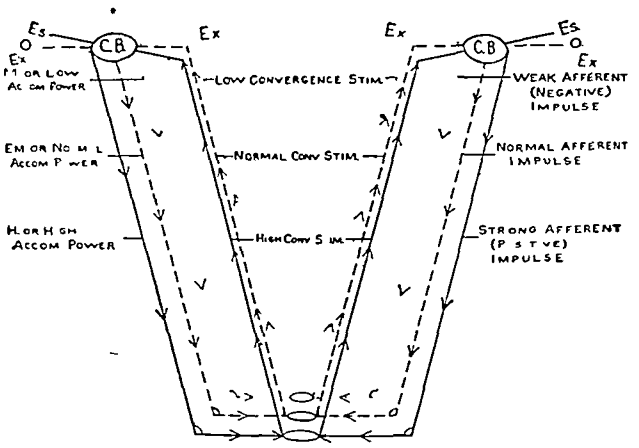

Fig 2 —Ciliary reflex arc C A, ciliary reflex arc C B ciliary body O orthophoria Es esophoria Ex exophoria

This is an important link in my conception, and I wish to drive it home the automatic nature of this midlevel control I regard the second level control as a part of that fundamental automatic neuromuscular mechanism by which the bodily functions are maintained, and, thus comprehended, it becomes at once a part of the great system which controls the involuntary forces, without which there would be no existence for us There is analogy between accommodation, convergence, the act of prehension, the systole of the heart, the respiratory stimulation (an excess leading to bronchial spasm), vasomotor tone, on one side of the system, and between inhibition of accommodation and convergence and the cardiac diastole and the like on the other side There is normally a controlling tonus in this reflex nervous system, an automatic balance between contraction and relaxation The voluntary impulses may initiate or inhibit its actions, but only to a limited, indirect and not a controlling way

Overtonus on the part of this system shows itself in excesses of accommodation, convergence and other automatic phenomena, it shows in acceleration of pulse during forced respiration, a common condition in girls and boys under 15—the *pulsus irregularis respiratus*—and it is held by Eppinger and Hess[10] that if this phenomenon continues after puberty it is abnormal, and, be it noted here, atropin controls and pilocarpin increases the overtonus

Now Reber,[11] in his excellent discussion on indications for operation in the tropias, thinks that it would be better if every patient who comes for operation should be at least 14 or 16 years of age, and that advancement should be preferred because of the preponderance of convergence forces before and the increase in the divergence forces after the fifteenth year

On this I wish to lay claim to the thought that convergence power diminishes at this period, not because of the cited reasons — anatomic development of cranium and attachment of muscles to the globes — but because another element is added to the automatic nervous regulation above mentioned From the standpoint of anatomy this so-called vegetative nervous mechanism is divided into midbrain, bulbar and sacral segments, and it is the sacral segment which becomes dominent at this age, for the evolution of the sexual function, and with it is a coincident lessening of tonus of the other segments which have in their order been dominant The midbrain segment finds egress through the oculomotor pathways, and convergence and ciliary weakness are by no means uncommon accompaniments of puberty and adolescence by virtue of this loss in domination This point should be considered both in diagnosis and therapy, and we may well believe it to be abnormal if, after puberty, a convergence excess holds, and we may well be forewarned not to operate for moderate degrees of convergence excess, and to undercorrect before puberty if we must operate

This is a big, new point of view given us by this newer work on the automatic nervous system It tells us that atropin and its like have other value than as cycloplegics since, when absorbed, they are inhibitory to the general overtonus manifested in ciliary contraction and convergence, while pilocarpin, strychnin and on occasion epinephrin are aids to the antithesis of this state, and, though they act differently, help to bring about an occasionally needed positive tone It tells us in what manner infections, indicanuria and acidoses may quickly affect accommodation and convergence through the automatic system, and it helps to explain the frequent development of strabismus as an accompaniment of exhausting diseases

The connection between the vegetative system and the ocular movements is through the ciliary ganglion, and we now have another reason for the administration of atropin for convergence excess, and we know why strychnin or pilocarpin is an aid in divergence excess† or convergence insufficiency, and we need not longer prescribe them empirically[12]

There is something very fundamental in this linking of ocular movements with the automatic nervous system It tells us to be physicians, and that phorias may be influenced by the conditions of this mechanism —

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[10] Eppinger and Hess Ztschr f klin Med lxvii No 3 and lxviii No 3

[11] Reber Indications for Operation of Strabismus Penn Med Jour xviii 602

[12] This point of view tells us that perhaps our foreign confreres are right when they say that in our country asthenopias are exaggerated Higher pressure of living as exemplified by us spells magnified tone of automatic functions this means closer tying up of correlated act overwrought kinetic system greater central fatigue and hyperesthesia

† Divergence excess in our legend signifies the prism divergence excess of Duane i e over ten centrads

the balance or imbalance of its segments Overtonus of this system results also in constipation from its effects on the circular musculature of the colon and the sphincter (akin to ciliary spasm and leading to autointoxication), and in some atypical types of thyroid disease, all are related, and all are modified by atropin and intensified by pilocarpin Undertonus leads to low accommodation, divergence excess, convergence weakness, preponderance of the sympathetic side of this automatic system, intensified by atropin, and relieved by pilocarpin And this pharmacologic differentiation is quite characteristic of the whole involuntary nervous system[13]

If we may, then, dismiss from our minds all thought of the primary influence of the will over the phorias and tropias, we shall have made a step toward the solution of our problem

TWO REFLEX ARCS

I would construct two separate reflex arcs to cover our conception of the visuo-oculomotor mechanism (1) the ciliary reflex arc — the accommodative convergence loop (C A, Fig 2), and (2) the retinal reflex arc — the fusion loop (R A, Fig 3)

I hope to be able by study of these to make clear some hitherto clouded points, and to show why it is that only by way of the ciliary arc may compensatory muscular overgrowth or undergrowth be brought about Also it may be seen why the training of the "fusion loop," as by worn prisms and prisms for exercise, is palliative only, and not in any way capable of correcting defects or weakness in the segments which go to make up the retinal arc

My conclusion that the retinal arc does not develop muscular compensation is supported by the experience of practically all of us, for prism exercise and prism wear do not bring about ocular balance[14] On the other hand, the ciliary reflex does, and the reasons for these observations may be shown

The significance of the various factors concerned may be briefly called to mind, craving your indulgence

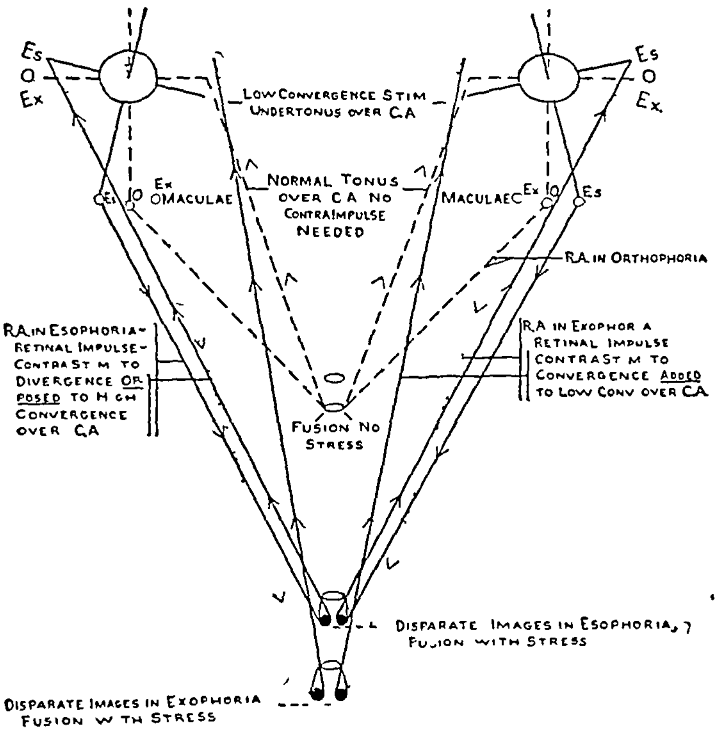

Fig 3 —Retinal reflex arc *C A* ciliary reflex arc, *R A*, retinal reflex arc, *O*, orthophoria, *Es*, esophoria, *Ex* exophoria

ETIOLOGY OF ESOPHORIA AND ESOTROPIA

Nonparalytic imbalance is the end-result of prolonged overstimulation or understimulation, actual or relative, and that not of an individual nerve but of a coordination An esophoria, for example, is the result of such an overstimulation of convergence If with it there is a correlative ciliary overgrowth, the condition is explained as a compensatory overaction of convergence, and this is true whether it has come about as the result of a hypermetropia (*a*) which forces the ciliary contraction, or whether (*b*) both accommodation and convergence are subject to overtonus as a part of the general automatic mechanism, as is common up to the age of 15 Or there may be (*c*) a weak ciliary muscle requiring overstimulation to get a focus, a stimulation which is carried over to a convergence excess, or lastly (*d*) there may be a *relatively* excessive convergence due to anomalies of development, because of which a normal ciliary contraction overacts on convergence, *a* and *b* would be differentiated by test under cycloplegia, *c* by tests of relative range of accommodation, and *d* by exclusion of *a*, *b* and *c*, supported by tropometric measurements In *a* the compensation may be such as to cause no discomfort, or the strain of accommodation may give symptoms and require refraction, and when the correction is made, difficulties arise over the changed relations, and the problem of partial or total correction is on us The comfort or discomfort attained depends on what I shall term the *habit impulse*, a stimulus which tends to perpetuate itself Its breaking up is a difficult matter, and as we all know, one which tries our patience, skill and endurance to the utmost This experience with refraction correction is one of the strong points in my conception of the ciliary reflex arc function

INFLUENCE OF PROLONGED CILIARY ARC STIMULATION

We have seen that in early life there is overtonus of the then developed segments of the automatic nervous mechanism The dorsal segment supplying the cardiac, respiratory, stomach and intestinal orders is dominant in infancy, then in early childhood comes the development of the midbrain segment If perchance there is more than a low degree of hyperopia, there is an exaggerated stimulus to both the ciliary and the convergence muscles leading to increased growth And, under normal conditions, something else happens the muscles thicken and shorten, and the tendons widen, while the opposing muscles become thinned and elongated

This is all going on while the tissues are plastic, and continues pari passu with the stimulation It is a reflex compensatory development like that of the heart muscles in valvular lesions If the ciliary stimulus is weak, so is the convergence stimulus, and there is dystrophy or undergrowth, as is shown in myopia There is plenty of proof for this We may vary the ciliary stimulus by increasing the strength of convex lenses, if there is overaction, or by applying concave lenses, if underaction (Fig 4), and thus control within measure the accommodation convergence loop, and the overgrowth or undergrowth But the results must invariably depend on the period of life, and the duration of its application If during the plastic period of life, it will tend to alter the growth development, but after the tissues have their growth the changes are slower and less in effect

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[13] Eppinger and Hess Vagotonia Monograph 1915

[14] Posey Muscular Imbalance and Its Treatment, Am Ophth, xxxiii, 24

Zentmayer's report[15] on the effects of correction of ametropia on the phorias are about what we would expect[16] He says in conclusion that while the changes in the phorias were not great, even after a lapse of time, it was even less when, in a series which he studied, but two weeks lapsed before the second test Now an early application of correction, that is, during the formative period, would have changed his results, and early stimulation of convergence in low convergence and overcorrection for high would aid or not according to how early in life it is applied Herein is the value of prescribed plus scales in esotropias, as originally advocated by Linn Emerson[17] and later emphasized by Reber[18] On occasion we have gone further and created artificial myopia by constant wear of overcorrection Prolonged use of atropin cuts out ciliary stimulation entirely and leads to dystrophy Usually the esophoria persists, and it may be that regressive changes go on faster for the ciliary muscle than for the convergence group, and that the ciliary thus drops to normal long before the convergent overgrowth, but it seems more likely that this is due to the fact that a strongly developed muscle responds to a light stimulus, and hence the stimulus which the ciliary body gets when the refraction is corrected is still sufficient to maintain the convergence at nearly its former power, and thus the esophoria is perpetuated even though the refraction is corrected

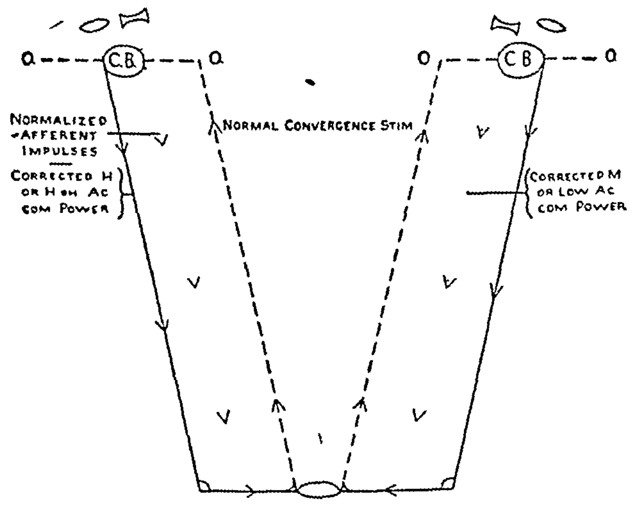
C.B
C B
Normalized Afferent Impulses
Corrected H or High Accom Power
Normal Convergence Stim
Corrected M or Low Accom Power

Fig 4—Ciliary reflex arc showing corrections or normalization of impulses

Hyperopia and ciliary overdevelopment, esophoria and esotropia, represent the positive side of this mechanism The negative side of the mechanism is underdevelopment or dystrophy, exophoria or exotropia, negative or underconvergence or divergence excess[19]

The vegetative system is not infallible and may go wrong, and hence persistent undertonus or overtonus may exist independent of errors of refraction, and such a condition, either as a disorder of automatic function or as an atavism, would explain exophorias in some cases This may begin early in life, as convergence insufficiency from lack of tonus, and go over to divergence excess or even exotropia This would be more likely to happen at puberty when the sacral segment develops, and would seem a reasonable hypothesis in the etiology of exophoria or exotropia If this is so, hope is offered through the study of the stimulation of tonus in the automatic nervous mechanism

One may see the need of correcting errors of refraction before the period of training of coordinations is passed They are generally well established by the sixth year of life By this means there is a chance to forestall the overgrowth or undergrowth which, once developed, tends to perpetuate itself under habit impulses

The end-result of relative overstimulation or understimulation during the development period over the ciliary arc will be a phoria so long as the fusion loop can carry the load, and we all know from observation that its possibilities are very great[20]

RETINAL REFLEX ARC

We come, then, to the retinal reflex arc — the fusion loop[21] — and the first point I would impress is my conception that fusion has little to do with the ciliary arc, that is, with the accommodation and convergence ratios (Fig 5) It is the innocent bystander who so often gets the blows delivered by antagonists, and that is what happens with the much abused fusion faculty

Fusion may depend on two factors 1 Inheritance,[22] hereditary absence of fusion (Fig 5), and this has been shown by many observers to be of great importance (Worth 50 per cent, Holthouse 30 per cent, Lagrange and Moreau 43 per cent, Reber 68 per cent, Junson 70 per cent) But this is perhaps only setting the question back a little further, since we may not know whether or not the anisometropia is the inherited factor 2 On the similarity of visual impressions (Fig 5)

Let us now view the loop diagrammatically It is made up of the retinal stimuli, afferent impulses, which are carried to the visual areas, and inasmuch as movements occur in the two eyes from stimulation of either occipital lobe, we know that impulses from both eyes are superposed in the visual cortex of each hemisphere[23]

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[15] Zentmayer, William A Study of the Effect on Heterophoria of the Correction of Ametropia The Journal A M A, Aug 15, 1914 p 572

[16] Zentmayer finds as the result of careful analysis and tabulation of 397 cases that the correction of the ametropia reduces the esophoria for distance when associated with H and Ah and tends to increase the exophoria for near When esophoria exists both for distance and near, the heterophoria at distance will be reduced and the esophoria for near may be converted into an exophoria Esophoria for distance and likewise an exophoria for near will be reduced by the correction of M Am Exophoria for distance and near will be practically unchanged by the correction of a coexisting M Am Esophoria for distance will be little changed or may go over into an exophoria by the correction of an associated Amh An exophoria for near under like conditions will be increased Exophoria for distance in anisometropia will be decreased by the correction of the ametropia Unfortunately age which is the crux of the whole question according to my conception was not considered by Zentmayer

[17] Emerson Linn Convergent Strabismus, Ophthalmology 1907

[18] Reber Use of Bifocals in Treatment of Esotropia in Children, Ophth Rec xxiii 612

[19] Bielschowsky Position of Relative Rest of Eyes XXXIX Ophth Congress Heidelberg p 67

[20] Bielschowsky (Footnote 19) gives evidence on this in his studies of the relative position of rest in 289 cases in which binocular vision had been lost and hence fusion was not in action He found less than 1½° of deviation in the primary position in 25 per cent of the cases while 10 per cent. had 2 or more inward Also that in hyperopia deviation inward (monocular esophoria) was frequent indicating independence of the ciliary reflex arc This also held for cases beginning before the age of puberty whether hyperopic or not, which would seem to show the influence of the general automatic system which we are so insistent is a factor in the action of the ciliary arc

[21] Please note that I have called this the fusion loop' and not 'fusion faculty and this is because the latter is only the neural segment of this retinal arc and the retinal segment is of probably paramount importance in the period of development, since if the retinal images are of varying sizes and shapes the disconsonance renders fusion difficult or impossible (Bradburn Etiology and Psychology of Ocular Imbalance Ophthalmology xi 183) That anisometropia is a blur on fusion may be proved by self experimentation If fusion fails the nonfixing eye goes of course toward the direction of the dominant pull

[22] Howell American Text Book of Physiology 1896 Worth Ibid 1906 p 23 Reber Present Status of the Heterophoria Question Ophthalmoscope xii 456 592 644

Fusion of identical images takes place normally and without stress Fusion of dissimilar images is difficult or impossible There is not time for discussion of this intricate phase of the problem, but one may be allowed to formulate a scheme of relations between breadth of fusion and binocular single vision without subscribing to any theory

One point should be self-evident, namely, that if the so-called fusion is sufficient to overcome an imbalance at all, it puts stress on the control coordinations A high degree of phoria with a good breadth of fusion would cause little, while the same phoria with a limited breadth would cause much stress

COMPENSATORY DEVELOPMENT IN THE FUSION LOOP

We have seen that in the ciliary arc there is compensation as between accommodation and convergence, and that they are coordinated But for the mechanism of fusion such muscular compensations do not develop If they did, prism exercise and prism wear would lead to altered rotations and diminutions of error, which we know that they do not This is a point against the intimacy of fusion and duction

The compensation in this loop is of a different type Its escape is through suppression of images If the so-called fusion is weak or absent, suppression is the easiest way out of the strain, but with strong fusion there is no escape, and fatigue and exhaustion of coordination result This brings us to the consideration of another factor

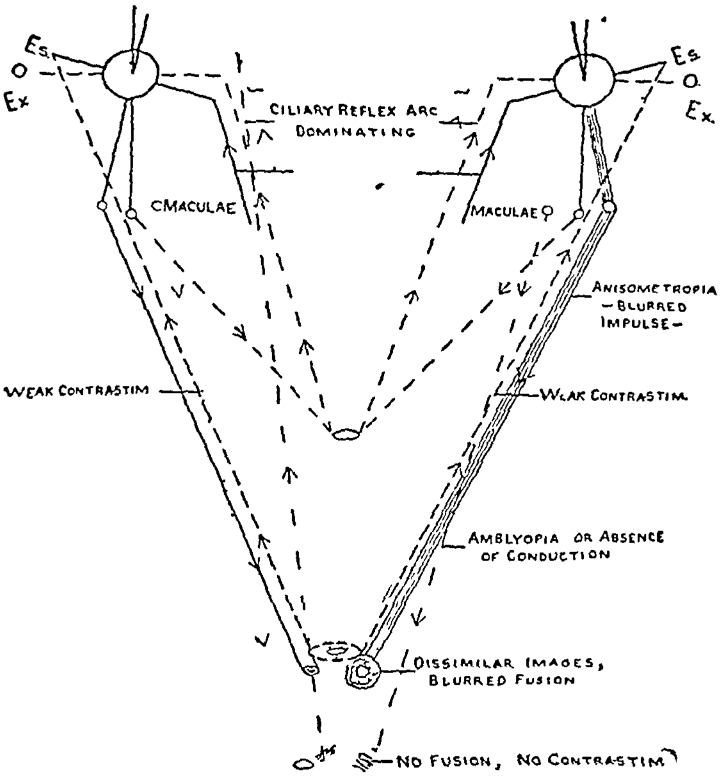

Fig 5—Retinal reflex arc, showing effects of anisometropia amblyopia and absence of fusion Abbreviations same as in Figure 3

THE INFLUENCE OF FATIGUE

In February, 1897, I called attention[24] to the analogy between muscular asthenopia and the fatigue neuroses, and in November, 1897, continued the study by a brief[25] on the primary causation of asthenopia and the influence of fatigue Again in 1912, at the American Academy of Ophthalmology, in a discussion of a paper by Reber[26] on prisms, this point of view was further emphasized I can best condense this argument by quoting what was said on that occasion

> About fifteen years ago we made an exhaustive analysis of the relation of fatigue to asthenopia, tracing the analogy between this eye distress and the fatigue neuroses, aiming to show that writer's cramp and reader's cramp are analogous While this study did not produce such a furore in the profession as to lead to my knighthood, as the youthful mind thought its due for such a discovery, it has served as a working hypothesis since then, and is worthy your thought, clearing, as it does, many otherwise unexplainable phenomena in this complicated subject Our case histories have during these years been recorded in terms of the neurologic nomenclature as a true dyskinesiā, of spastic or the neuralgic type as the case might be, for ciliary spasm is a true spastic dyskinesia, even as is writer's or piano player's cramp Now, reasoning from the assumed analogy, we have a right to bring to bear the observations of the neurologists in their field, where the neuromuscular organism is more exposed for electric and other tests
>
> The work of Hodge[27] was quoted by me at that time, and the demonstration of Crile here Wednesday offers later-day confirmation that it is the central nerve elements which are changed and profoundly so, by excessive employment, and obviously the nerve stress is much greater when the conditions of muscle strain are abnormal And as muscle may still be stimulated to contraction after complete voluntary exhaustion, we know it is the coordinating and volitional centers that suffer exhaustion and that biochemical catabolic products do the choking I beg your attention here to the phenomena that even as the hand may be moved with freedom by sufferers from writer's cramp for other acts than writing, so the eye will move without discomfort for work other than the intricate coordinations, as reading, and this also points to the central origin of the distress
>
> Now, attention is called to this viewpoint because it seems to explain at once why prisms worn for exercise and why minor operations on the tendons so often give relief and why that relief is so often temporary The paradox must have often come to the notice of many of you, when prisms given have been through misunderstanding or through error wrongly applied, either for exercise or wear, i e, as to the placing of the edge, that the patient expresses relief, also that weighted convergence exercise will often relieve the distress of esophoria, and many other seeming paradoxical experiences with prisms and with management of the ocular dynamics generally
>
> The assumption of fatigue or exhaustion of the coordinating mechanism rather than of the muscles themselves explains the apparent paradox, and clears the subject of much obscurity, for the work of coordination is changed in detail by the altered relations brought about by the applied prisms The relation of fatigue to incoordination, both as subjectively and as objectively manifested, is again commended to your thought

Therefore, for something like twenty years this has been a central thought, and around it has been developed my conceptions of this mechanism

INFLUENCE OF ANATOMIC RELATIONS

I had not intended to discuss the anatomic side of the problem, but a few points, and only a few, must be considered in support of my conceptions

Divergence a Negative Convergence—On the convergence or positive side of our ciliary reflex arc we have three strong muscles—the superior and inferior recti and the internus, all innervated by the same nerve, the nerve which also innervates the ciliary body This is a dominant grouping as against the abductors, the externi and the obliques, all with different nerve supplies, and lends credence to my conception of negative convergence or reduced tonus, leading to divergence, instead of active divergence as a function One cannot deny the existence of a control for divergence in the light of the definite clinical findings in Zentmayer's[28] case and Duane's[29] four cases of divergence paralysis But such a center of control must be merely accessory and supporting, since it is proper to ask, What but diplopia could result from the primary employment of divergence? The power to lift one eye against its fellow — from 1 to 3 degrees of sursumduction — is another contrary movement, and what but diplopia would follow the employment of such a function? The conclusion is forced, therefore, that these, as well as two parallel movements which Maddox[30] uncovered in a case of nystagmus, and two contrary movements, namely, binocular intorsion and extorsion,[31] are control mechanisms and useful for offsetting untoward swings or torsions and not for primary acts

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[23] Howell (Footnote 6)

[24] Walter, Will On Asthenopia as a Fatigue Neurosis, Ophth Rec, February, 1897

[25] Walter, Will Primary Causation of Asthenopia Relation of Fatigue Am Jour Ophth November, 1897

[26] Reber Value of Prisms in Ophthalmic Practice, Am Acad Ophth and Oto Laryng, 1912, p 136

[27] Hodge Am Jour Ophth, xiv, 324

Delicacy, accuracy and steadiness are needed for ocular movements, and such accessory functions are necessary to these ends That is why also a muscle does not act alone, for there could be none of these effects with the pull of a single strand of tendon

Regarding the Action of the Retinal Reflex Arc — I have shown diagrammatically that stimuli from the maculae — central images — fuse naturally, but that they tend to separation in muscle imbalance The easy and natural way — the way it would be done over the ciliary arc — to effect this in esophoria, for instance, would be by inhibiting impulses to convergence (as by plus lenses) and in exophoria by stimulating convergence (as by minus lenses), and the result of that would be a compensatory neuromuscular training tending toward balance That such is not the method in what we call the retinal reflex arc, we know because no such muscular compensation takes place and the phoria does not change The reverse happens, for the stimulus is thrown to the divergence coordination for esophoria and to the convergence for exophoria, and, moreover, this contra-impulse is not productive of lessened primary impulse to the convergence coordination since it is not an inhibitory one It is a contra-impulse and leads to extra-ocular tension There is no other active means of escape, and as this does not lead to muscular compensation, as experience tells us, the result is stress on the coordination The only escape for this is by suppression of images, and this is impossible in well developed power of fusion There being no compensatory muscular development over this loop, the compensation is afforded by changing the ability to fuse, and that does not alter the phoria, but only the ability to endure it The principle taught us by this conception is, then, *Prism exercise or prism wear for symptoms,* but *refractive treatment for changing muscular compensation* The latter must be done during the growth period for inherent defects, and on occasion for incidental imbalance

Proof of Ciliary Arc Control of Convergence Development —There is more convergence in high myopia than in emmetropia, but seldom does it lead to esophoria or esotropia One would think that convergence power would increase, resulting in errors on the positive side, but such is not the case, and my conception is that the absence of the ciliary stimulus is the reason for it, since that is the afferent end of the loop through phylogenetic association

APPLICATION

Just how do these conceptions affect us practically?

1 They speak for early setting in order of the ciliary arc — the accommodative convergence loop This means before the sixth year, and also, if not corrected, that compensatory changes will take place and lead to conflict between the convergence development and single vision This develops phorias if fusion is possible, or tropias if it is not

Safeguarding the development of fusion by early creation of similar images is also necessary This may or may not be possible, and if not the eyes should be watched for development of the dominant pull This pull should be neutralized before overgrowth and contracture on one side have led to atrophy and thinning on the other

Ametropes, antimetropes and anisometropes should be born with glasses on

2 There should be recognition of the dominant effects of the automatic nervous mechanism and particularly the natural overtonus on the ciliary reflex arc, the normal plus accommodation and convergence before puberty, and lastly the influence of drugs and of the kinetic system on this tonus

3 There should be recognition of fatigue effects and means of controlling them

4 Has it occurred to you, as it has to me, quite out of keeping with everyday needs of ocular movements, that the eyes should be bound by such hard and fast lines as we have been led to believe? Seeing is not a mathematical problem, but a natural, and, normally, subconscious function It is difficult to subscribe to the inelastic mechanism of the physicists Such a conception would require that to be comfortable we must carry our heads in a fixed position, eyes horizontal, in the primary position, and all the laws of rotation, horopter, corresponding points and planes complied with We should study the owl, who, wise in historic lore, without ocular muscles, with eyes fixed on bony bases still projects and fixes with accuracy and follows his prey, guided by neck muscles, to a degree almost incredible

Our visuo-oculomotor mechanism is provided with many compensations, muscular and psychic, with ability to suppress confusing images, both peripheral and central, and more safeguards than we have hitherto conceived

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[28] Zentmayer Paralysis of Divergence Tr Am Ophth Soc xiii 521

[29] Duane Ophthalmology October 1905

[30] Maddox Case of Seesaw Nystagmus Proc. Roy Soc Med April 14 1914

[31] Following is Maddox s table of binocular innervations modified to my nomenclature by the substitution of versions for ductions

KINGDOM I FOR CREATING THE BINOCULAR EYE

Contrary	Horizontal	1 Convergence 2 Divergence
	Vertical	3 R Relative elevation over L 4 L Relative elevation over R
	Torsional	5 Binocular intorsion 6 Binocular extorsion

KINGDOM II FOR DIRECTING THE BINOCULAR EYE

Parallel	Horizontal	7 Binocular dextroversion 8 Binocular levoversion
	Vertical	9 Binocular elevation 10 Binocular depression
	Torsional	11 Binocular dextrotorsion 12 Binocular levotorsion

In surprising ways the anatomic, physiologic and psychic factors are correlated, and the breadth and sites of attachments of tendon are in proportion to the needs of rotation, and to the needs of control We would be slow if ocular movements were not reflex, accurate and from habit, easy

122 South Michigan Avenue

ABSTRACT OF DISCUSSION

Dr G C Savage, Nashville, Tenn Thirteen years ago I *made further statement* of my discovery of additional members of the family of conjugate brain-centers connected with the eyes Up to that time only five had been known and named Maddox had said "Besides these five I imagine there may be three which govern torsion, and two which regulate the vertical balance of the eyes" In the same paper I announced that I had discovered another *family* of brain-centers, and showed that each member of this group existed in the interest of binocular single vision

All that was said in that paper about these two families of centers was correct, but the whole truth was *not stated*, for the reason that some truths and beauties connected with these centers had not yet come to the surface Later the nerve-control of the ocular muscles was more fully set forth by me The most severe criticism was to the effect that the brain-centers discussed seem to be too numerous Dr Walter's paper does not deny the existence of the nine conjugate cortical centers and the twelve individual basal centers

But two groups of brain-centers are needed for explaining the action of any ocular muscle or combination of ocular muscles, extrinsic or intrinsic To the higher group belong the centers that are conjugate, for the reason that their cells are diaxonic, volitional, for the reason that the will, whether consciously or unconsciously exercised, is the only agent for setting free their stored neuricity, verting, for the reason that one, or at most three of them, is concerned in every turning of the eyes These centers act alike on orthophoric, heterophoric and heterotropic eyes, on eyes that are capable of binocular single vision and on eyes that have antipathy to binocular single vision, and when there is only one eye There are eighteen of these centers connected with the extrinsic ocular muscles, associating the twelve into nine groups of two muscles, one belonging to each eye Only nine of the eighteen centers are ever active, eight always on one side of the brain, while the other one always stands alone on the other side of the brain The other nine centers, eight on one side of the brain and one on the other side, neither store nor discharge neuricity, for the reason that they are not needed Each group of nine, at birth, stands as ready as the other to take up the verting and converging work of the eyes, but the determining cause cannot be discussed here

Dr George H Price, Nashville, Tenn The law of binocular rest and motion is imperious, and will be obeyed as long as there is equal tonicity of all the muscles, as in orthophoria, in maintaining binocular single vision If tonicity alone is not sufficient, as in heterophoria, then tonicity plus contractility, which is brought about by the calling into action of the basal center of the weaker muscle, is necessary to compel obedience to this law If tonicity plus contractility is not equal to the demands of this law, then there is some form of heterophoria In discussing this question I will refer only to the phorias Phorias are only two in kind, namely, intrinsic and pseudo Intrinsic phorias are always muscular in origin, the varied condition one of two forms *abnormality in* the relative sizes of the two muscles, or abnormality of their relative attachments Intrinsic phorias can be cured by the exercise of the weaker muscles, or by suitable operations on the stronger or weaker muscle, and can be relieved by prisms in the positions of rest for the weaker muscle In either of these cases the basal centers are the structures relieved Pseudophorias are always dependent on a disordered nervous relationship between the ciliary muscles and the converging muscles, and the pseudo-error is always an esophoria or an exophoria, and never a hyperphoria, cataphoria or a cyclophoria There are two causes for pseudo-esophoria First, it is always dependent on a weak ciliary muscle, whether in an emmetropic or a *hypermetropic* eye, requiring an extraordinary impulse from the tenth conjugate center in order to produce a given amount of contraction This excessive excitation always induces an associated impulse from the third conjugate center to the interni, causing the pseudo-esophoria If this condition exists in emmetropia, the pseudo-error only *appears in the near*, but if such eyes are hypermetropic, the pseudo-error shows itself in both the far and the near The only cure for this form of pseudo-error is the exercise *of the ciliary muscle*, the only other relief for such condition would be the premature prescribing of presbyopic lenses The second cause of pseudophoria is hypermetropia, and this *pseudo-error varies* in proportion to the intrinsic strength of the ciliary muscles, being always less if these are strong, and *always more if they are weak* This form of pseudo-*esophoria* shows itself in one of three ways first, an esophoria when there is intrinsically orthophoria, *second*, in a greater quantity of esophoria, both far and near than *intrinsically* exists, *third*, showing a less quantity of exophoria, both far and near, than intrinsically exists This form of pseudo-esophoria is always and only curable by the correction of the existing hypermetropia In the first case the correcting lenses induce a condition of orthophoria, resulting in absolute relief In the second case the plus lenses always correct only the pseudo-error, leaving the intrinsic esophoria, hence the relief will *not be complete or permanent* In such cases the plus lenses must be supplemented by exercises or operation, depending on the amount of the intrinsic esophoria in each case In the third case a full *correction* of the hypermetropia should never be given, for in such a case the intrinsic exophoria would become manifest In such a case, *however, if the hypermetropia is high in degree, and urgent in its demands*, here the intrinsic exophoria should be cured either by *exercise or operation*, depending on the amount of the intrinsic exophoria Pseudo-*exophoria which is* nothing more or less than deficient convergence, is always dependent on one of two causes, namely, a myopia, or excessively *strong ciliary muscles in emmetropia*, therefore always showing itself in the near The first form is curable by correction of the myopia with proper lenses The second form is relievable by such concave lenses as will make a supplemental demand on the tenth conjugate center, which will bring this demand up to the normal for that center in near work Whether *the pseudo-error* is esophoric or exophoric, it is curable only by establishing the normal relationship between the tenth and third conjugate centers

Dr Wendell Reber, Philadelphia The three levels which Dr Walter speaks of must be considered Sherrington and Russell showed beyond all peradventure the existence of centers in the frontal lobes That there are others at the base of the frontal lobe seems without question Burkholder makes a suggestive observation when he calls attention to the fact that the occipital cortex is split up by the line of Genarri in a way that no other portion of the brain cortex is arranged, we have a double arrangement of the cortex, and if there are visuo-motor centers to be used all day long, it is only to be supposed that nature would place them anatomically at about that point This is a speculation, but is quite as good as any other With all respect to Dr Savage's views, until we have absolute evidence of the histologic arrangement of the third nerve nuclei, we cannot dogmatically assert the existence of various brain centers for various ocular movements We have now five or six schemes for the arrangement of the nucleoli in the nucleus of the third nerve We must never forget that no one ocular muscle moves an eye in any one direction If we recall the old scheme of Mauthner (drew a diagram on the blackboard) and choose to divide it in this fashion (indicating) we will see how in the movement of *one* eye, two elevators must take part If we superimpose the scheme for one eye over that for the other eye it becomes evident how movement in any direction is bound to be a very complex act We must bear that in mind all the time When we come to consider the influence of the ciliary arc reflex, it does not explain the large proportion of hypermetropes that have exophoria, or divergence excess It may be convergence insufficiency in a moderate majority as determined by poor convergence at the near point I think convergence anomalies in the vast majority are a reversion to a lower type Convergence is the last act of evolution that has been added to us, and the number of people with seemingly poor convergence is astonishingly large, also the great readiness with which it responds to training bears out this assumption The idea of fatigue, as emphasized by Dr Watler, cannot be too much emphasized It is true as foreign authorities have claimed that we are laying too much stress on asthenopia I believe it is simply a reflex of that high rate at which the American lives We call it advanced civilization Dr Risley has happily included all this tension under the term "physiologic vices of civilization" in which we all more or less partake I agree with Dr Posey that in a given case of convergence insufficiency we can produce complete abatement of the symptoms with training, but that the muscular error remains at about the same amount What the patient wants is relief from the symptoms, and this we give him with the prism training I agree with Dr Walter that we must be physicians first, last and all the time, that right living is the basis of cure of every muscular anomaly I believe seeing is a mathematical problem, although Dr Walter feels that it is not exactly so, but I believe that it is, plus the ever varying complexity that goes with the development of the association fibers in different individuals

Dr Will Walter, Chicago We are not discussing primarily the centers of control The coordinating or reflex centers are arbitrarily placed in our scheme and are included in the mid-level control However, answering the arguments of Dr Savage, I see no reason for changing my views on localization of control of ocular movements There is no fundamental difference between us as to localization, but only as to grouping of control It certainly is better to consider the question from the standpoint of three levels of control It is better than to divide them as he does into cortical and basal and then forthwith include the occipital cortex in the basal We are talking of physiologic levels and not spirit levels In the second place, it is manifestly better to adopt some such tables of movements as Maddox has given us, which is based on ocular movements that are known, then on his grouping under control of the recti and control of the obliques This conception of independent action of recti and obliques has no proofs The thought of convergence with the interni and divergence with the externi has been the source of more error than any fallacy on ocular movements If we get it clearly in mind that no one muscle moves the globe in any one direction we will have less confusion, for, as we have said and many others have shown, there is no support for such a thought It is contrary to physics and nature is not so remiss It is certainly safer to speak of convergence control than of internal rectus control in the light of what is known of the influence of the vertical recti, for convergence is not always (perhaps not usually) done in the median plane

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The Cost of Drugs—It is estimated that $500,000 000 are expended for drugs in this country, most of which are self-administered Into the delicately adjusted machinery of the human body is yearly poured at least 75,000 000 pounds of drugs and chemicals, haphazard with no real knowledge on the part of the users of what the mess is going to do to that machinery We have cold cures, headache cures, consumption cures, cancer cures, liver pills kidney cures, spring tonics blood purifiers, ague cures rheumatism cures, cures for everything except the credulity and physical neglect that make possible this enormous expenditure for drugs that are in the vast majority of cases useless when they are not harmful Since 1880 the expenditure per capita for patent remedies consumed in the United States has risen from 33 cents to $1 54—*Health Letter* Life Extension Institute

CASE OF MASTOIDITIS COMPLICATED BY PURULENT CEREBROSPINAL MENINGITIS, OPERATION AND RECOVERY*

W H Huntington, M D, Washington, D C

History—A W, a white girl, aged 8, had a past history of no importance She had complained of head colds since the latter part of December, 1915 (with occasional earache), which were not severe and subsided without treatment

Jan 21 1916, the left ear began to pain intensely and the temperature was 101, headache was severe and the child was irritable January 22, she was brought to my office by the mother, who gave me the foregoing information At that time examination showed a slightly red membrane in the left ear, there was no bulging and no perforation or discharge There had never been any discharge from the ear There was slight postauricular pain and some pain in the angle under the ear

Treatment and Course—A free paracentesis was done which yielded no pus, the temperature was 100 5 January 23 the mother reported that the child was feeling better and was out playing Temperature was normal

January 24 the mother reported that the child's temperature was 102, that headache was intense, there was frequent vomiting and the child was very irritable, and complained of pain in the back of the neck

I found the patient in bed, in an extremely exhausted condition She was vomiting a greenish watery fluid, and was slightly delirious, with knees drawn up, head drawn back, pupils dilated and marked nystagmus with quick component to the diseased side, Kernig's sign was present There was no eruption on the body The patient had had no chills Tache cerebrale was negative There was no discharge from the ear There was slight sagging of the superior meatal wall The temperature was 102 and the pulse, 120 The mother was informed of the grave condition of the child My diagnosis at that time was "latent mastoiditis with meningitis,' and my hopes were that the meningitis was of the serous type

The patient was taken to the hospital, where I called Dr McKimmie in consultation He concurred with me in the diagnosis and advised immediate operation Nystagmus at that time was less marked while the sagging of the meatal wall was more marked than when the patient was examined at home Postauricular pain was marked The patient was delirious with a temperature of 103, and pulse 130

The operation revealed a large amount of fluid pus in the cortical cells, antrum tip and deeper cells overlying the sinus wall There was no macroscopic evidence of necrosis of the inner table

Paracentesis was repeated Lumbar puncture showed fluid under marked pressure and rather cloudy I withdrew about 25 c c, which was taken immediately to Dr W H Hough for chemical microscopic and bacteriologic examination The report was as follows Appearance opaque, protein content, markedly increased cells per cubic millimeter, 6,850, differential cell estimation chiefly polymorphornuclear leukocytes, a few lymphocytes and endothelial cells, occasional macrophage and plasma cell Fehling's solution was not reduced The only organism present was the Friedländer bacillus

The morning after the operation the patient was slightly delirious and irritable and complained of pain in the head back of neck and throat the knees were constantly drawn up and the flexor contractions were general There was some hyperesthesia of the back No nystagmus was apparent On the afternoon of the the 25th the patient was bright the temperature was 99 8 and headache was less marked January 26 her condition was much improved the headache and pain in neck were much less severe and muscular contractions had diminished

From this time the temperature remained normal no complications ensued and the mastoid wound healed in less than eight weeks The patient was discharged March 20 The labyrinth on the left side is functionating perfectly at this time, and there seem to be no abnormalities whatever as a result of the meningitis

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* Reported to the Medical Society of the District of Columbia March 8 1916

COMMENT

This case is of interest for several reasons

Fortunately the child was seen in the early irritative stage and operated on early I attribute the recovery to this fact and also to the fact that a lumbar puncture was done The latter, although done principally for diagnostic purposes, undoubtedly exerted a favorable influence on the disease, and I feel certain that it was a large factor in the recovery

Another point of interest was the fact that there never had been any discharge from the ear This fact and the lack of other subjective and objective symptoms typical of mastoiditis would make one hesitate to make that diagnosis

The bacteriologic work was done by Dr Lester Neuman, and his report showing Friedlander's bacillus as the organism cultured from the spinal fluid, adds still another interesting feature, as this organism is rarely the cause of meningitis

The intelligent observation of the child by its mother made it possible for an early diagnosis and operation I wish to add to the plea made so often by the aurist for a close observation of children, by mothers and family physicians, when the usually neglected nasal and aural infections are in evidence Attention to these cases will tend to the conservation not only of the special senses, but of life itself

1624 I Street N W

Therapeutics

BLOOD PRESSURE

(*Continued from page 35*)

TECHNIC

It is essential that the patient on whom the examination is to be made should be at rest, either comfortably seated, or lying down All clothing should be removed from the arm, and there should be no constriction by sleeves, either of the upper arm or the axilla When the blood pressure is taken over the sleeve of a garment, the instrument will register from 10 to 30 mm higher than on the bare arm[3]

While it may be better, for insurance examinations, to take the blood pressure of the left arm in right handed persons as a truer indicator of the general condition, the difference is generally not great The right arm of right handed persons usually registers a full 5 mm higher systolic pressure than the left arm

The patient, being at rest and removed as far as possible from all excitement, may be conversed with to take his mind away from the fact that his blood pressure is being taken He also should not watch the dial, as any tensity on his part more or less raises the systolic pressure, the diastolic not being much affected by such nervous tension The armlet having been carefully applied, it is better to inflate gradually 10 mm higher than the point at which the pulsation ceases in the radial The stethoscope is then firmly applied, but with not too great pressure, to the forearm just below the flexure of the elbow The exact point at which the sound is heard in the individual patient, and the exact amount of pressure that must be applied, will be determined by the first reading, and then thus applied to the second reading One reading is never sufficient for obtaining the correct blood pressure The blood pressure may be read by means of the stethoscope during the gradual raising of pressure in the cuff, note being taken of the first sound that is heard (the diastolic pressure), and the point at which all sound disappears, as the pressure is increased (the systolic pressure) The former method is the one most frequently used

By taking the systolic and diastolic pressures, the difference between the two being the pressure pulse, we learn to interpret the pressure pulse reading While the average pressure pulse has frequently been stated as 30 mm, it is probable that 35 at least, and often 40 mm represents more nearly the normal pressure pulse, and from 25 mm on the one hand to 50 on the other may not be abnormal

Faught[4] states his belief that the relation of the pressure pulse to the diastolic pressure and the systolic pressure are as 1, 2 and 3 In other words, a normal young adult with a systolic pressure of 120 should have a diastolic pressure of 80, and therefore a pulse pressure of 40 If these relationships become much abnormal, disease is developing and imperfect circulation is in evidence, with the danger of broken compensation occurring at some time in the future

It should be remembered that the diastolic pressure represents the pressure which the left ventricle must overcome before the blood will begin to circulate, that is, before the aortic valve opens, while the pressure pulse represents the power of the left ventricle in excess of the diastolic pressure Therefore it is easy to understand that a high diastolic pressure is of serious import to the heart, a diastolic pressure over 100 is significant of trouble, and over 110 is a menace

FACTORS INCREASING THE BLOOD PRESSURE

With normal heart and arteries, exertion and exercise should increase the systolic pressure, and generally somewhat increase the diastolic pressure The pressure pulse should therefore be greater When there is circulatory defect or abnormal blood pressure, exercise may not increase the systolic pressure, and the pressure pulse may grow smaller As a working rule it should be noted that the diastolic pressure is not as much influenced by physiologic factors or the varying conditions of normal life as is the systolic pressure

In an irregularly acting heart the systolic pressure may vary greatly, from 10 to 20 mm or more, and a ventricular contraction may not be of sufficient power to open the semilunar valves Such beats will show an intermittency in the blood pressure reading as well as in the radial pulse The succeeding heart beats after abortive beats or after a contraction of less power have increased force, and consequently give the highest blood pressure Kilgore urges that these highest pressures should not be taken as the true systolic blood pressure, but the average of a series of these varying blood pressures In irregularly acting hearts it is best to compress the arm at a point above which the systolic pressure is heard, then gradually reduce the pressure until the first systolic pressure is recorded, and then keep the pressure of the cuff at this point and record the number of beats of the heart which are heard during the minute Then reduce the pressure 5 mm and read again for a minute, and so on down the scale until the varying systolic pressures are recorded The average of these pressures should be read as the true systolic blood pressure During an intermittency of the pulse from a weak or intermittently acting ventricle, the diastolic pressure will reach its lowest point, and in auricular fibrillation the pressure pulse from the highest systolic to the lowest diastolic may be very great

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[3] Rowan, J J The Practical Application of Blood Pressure Findings, The Journal A M A, March 18, 1916, p 873

[4] Faught New York Med Jour, Feb 27, 1915, p 396

In arteriosclerosis the systolic may be high, and the diastolic low, and hence a large pressure pulse When the heart begins to fail in this condition, the systolic pressure drops and the pressure pulse shortens, and of course any improvement in this condition will be shown by an increase in the systolic pressure The same is true with aortic regurgitation and a high systolic pressure

If the systolic pressure is low and the diastolic very low, or when the heart is rapid, circulation through the coronary vessels of the heart is more or less imperfect Any increase in arterial pressure will therefore help the coronary circulation The compression of a tight bandage around the abdomen, or the infusion of blood or saline solutions, especially when combined with minute amounts of epinephrin, will raise the blood pressure and increase the coronary circulation and therefore the nutrition of the heart

MacKenzie,[5] from a large number of insurance examinations in normal subjects, finds that for each increase of 5 pulse beats the pressure rises 1 mm He also finds that the effect of height on blood pressure in adults seems to be negligible On the other hand, it is now generally proved that persons with overweight have a systolic pressure greater than is normal for individuals of the same age He believes that diastolic pressure may range anywhere from 60 mm of mercury to 105, and the person still be normal A figure much below 60 certainly shows dangerous loss of pressure, and one far below this, except in profound heart weakness, is almost pathognomonic of aortic regurgitation While the systolic range from youth to over 60 years of age gradually increases, at the younger age anything below 105 mm of mercury should be considered abnormally low, and although 150 mm at anything over 40 has been considered a safe blood pressure as long as the diastolic was below 105, such pressures are certainly a subject for investigation, and if the systolic pressure is persistently above 150, insurance companies dislike to take the risk However, it should be again urged in making insurance examinations that psychic disturbance or mental tensity very readily raises the systolic pressure MacKenzie believes that a diastolic pressure over 100 under the age of 40 is abnormal, and anything over the 110 mark above that age is certainly abnormal

It has been shown, notably by Barach and Marks,[6] that posture changes the blood pressure When a normal person reclines, with the muscular system relaxed, there is an increase in the systolic pressure and a decrease in the diastolic pressure, with an increase in the pressure pulse from the figures found when the person is standing When, after some minutes of repose, he assumes the erect posture again, the systolic pressure will diminish and the diastolic pressure increase, and the pressure pulse shortens

Excitement can raise the blood pressure from 20 to 30 mm, and if such excitement occurs in high tension cases there is often a systolic blow in the second intercostal space at the right of the sternum This may not be due to narrowing of the aortic orifice it may be due to a sclerosis of the aorta On the other hand, it may be due entirely to the hastened blood stream from the nervous excitability This is probably the case if this sound disappears when the patient reclines If it increases when the heart becomes slower and the patient is lying down, the cause is probably organic

This psychic influence on blood pressure is stated by Maloney and Sorapure[7] "to be greater than that from posture, than that arising from carbonic acid gas control of the blood, than that arising from mechanical action of deep breathing upon the circulation, and than that arising from removal of spasm from the musculature"

Weysse and Lutz[8] find that the systolic pressure varies during the day in normal persons, and is increased by the taking of food, on an average of 8 mm The diastolic pressure is not much affected by food This increased systolic pressure is the greatest about half an hour after a meal, and then gradually declines until the next meal

Any active, hustling man, or a man under strain, has a rise of blood pressure during that strain, especially notable with surgeons during operation, or with brokers or persons under high nervous tension Daland[9] states that a man driving an automobile through a crowded street may have an increase of systolic pressure of 30 mm, and an increase of 15 mm in his diastolic pressure, while the same man driving through the country where there is little traffic will increase but 10 mm systolic and 5 mm diastolic Fear always increases the blood pressure This is probably largely due to the peripheral contractions of the blood vessels and nervous chilling of the body

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION ITS ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES"

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL

W A. PUCKNER, SECRETARY

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The *Bacillus bulgaricus* and the *Streptococcus acidi lactici* are grown in skim milk without the addition of any chemical and the culture sent out represents these organisms growing in this medium

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[5] MacKenzie Med Rec., New York Dec 18 1915

[6] Barach J H. and Marks W L. Effect of Change of Posture—Without Active Muscular Exertion—on the Arterial and Venous Pressures Arch Int Med May 1913 p 485

[7] Maloney and Sorapure New York Med Jour May 23 1914 p 1021

[8] Weysse and Lutz Am Jour Physiol May 1915

[9] Daland Pennsylvania Med Jour July 1913

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SATURDAY, JULY 15, 1916

THE NERVOUS SYSTEM IN RELATION TO DIET AND DISEASE

The weight of the brain, the largest component of the central nervous system, comprises less than 2 per cent of the weight of the entire body For this reason, perhaps, it is scarcely to be expected that ordinary chemical changes in the nervous tissues would reveal themselves readily in the midst of the preponderatingly greater metabolism which is associated with the abundant muscular and glandular structures of the body Careful examinations of the excreta and measurements of the respiratory exchange have accordingly failed, as a rule, to give any significant indications of alterations in the brain or spinal cord which can be associated with definite functional or pathologic changes To obtain evidence of upsets in the central nervous system it has become customary, therefore, to depend on special physiologic tests, for the opportunity to make a direct inspection of the nervous tissues and to investigate possible changes in their cells is never available except at necropsy The nearest approach to a chemical examination of any peculiarities in the chemical changes within the nervous system consists in occasionally possible observations on the cerebrospinal fluid in which unusual products may perhaps be expected to accumulate for the moment in somewhat greater concentration than in fluids more remote from the nervous structures Even in this case it is doubtful whether, in view of the rapid transfer of soluble substances liberated from the cells of the brain or cord into the blood stream, any detectable change of composition referable to the nervous structures themselves is to be expected during life

There are surprisingly few data on the chemical composition of the central nervous system in relation to disease, although the pathologic histology of nervous disorders has been a fruitful field of study In part the lack of knowledge on the chemical side doubtless is due to the inherent difficulties of such investigations Suitable material of a sort appropriate for analysis under acceptable conditions is never abundant, and few investigators have prepared themselves for research in the biochemistry of the nervous system The meager data available indicate that ordinary changes in diet do not materially affect the brain and spinal cord in its grosser characteristics of chemical composition Even starvation produces slight variations, at best, from the supposed normal

Recent years have witnessed an awakening of experimental interest in a number of diseases attended with evidences of histologic changes in the peripheral nerves and presumable alterations in the central nervous system, if one may judge from the severity of the symptoms often initiated Such features have often been discussed in relation to beriberi and varied types of polyneuritis and more recently to pellagra Inasmuch as these disorders are currently widely associated with deficiencies of diet, considerable significance attaches to the newly reported researches from the Hygienic Laboratory of the U S Public Health Service[1] relating to the chemical changes in the central nervous system as a result of restricted vegetable diet Voegtlin has recently advanced the hypothesis that pellagra is due to a mainly vegetable diet, characterized by a relatively low percentage of protein and a correspondingly high content in carbohydrates Koch and Voegtlin have now observed various changes in the brain and spinal cord of animals fed on an exclusive vegetable diet The important point is that histologic examination of the central nervous system of these animals reveals extensive degeneration of many nerve tracts in the spinal cord, very similar to those found in pellagra In some of the animals the chemical changes are practically identical with the changes observed in pellagra These findings, therefore, are believed to yield additional evidence for the theory that pellagra is a dietary disease

We cannot discuss here the details of the extensive chemical analyses conducted by the Hygienic Laboratory on the central nervous system in cases of uncomplicated pellagra Koch and Voegtlin conclude that in a general way the spinal cord exhibits the most striking chemical changes, a fact which is in perfect agreement with histologic observations The chemical changes in pellagra, while similar in many respects, differ from those in other diseases affecting the central nervous system They believe that the present investigation brings out the fact that the central nervous system in pellagra is subjected to a series of considerable chemical changes involving principally certain lipoids The study of these changes from a chemical point of view has led to a new method of characterization of this disease which may permit them to be correlated, as has been shown in the preceding investigation, with the changes experimentally produced in the nervous system of animals

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[1] Koch, Mathilde L, and Voegtlin, Carl I Chemical Changes in the Central Nervous System as a Result of Restricted Vegetable Diet II, Chemical Changes in the Central Nervous System in Pellagra, Bull 103, Hyg Lab, U S P H S, February, 1916 Voegtlin, Carl Am Jour Physiol, 1915, Proceedings, The Treatment of Pellagra, The Journal A M A, Sept 26, 1914, p 1094

The demonstration of an atrophy of the central nervous tissues associated with characteristic quantitative variations in the chemical constituents studied and produced by means of a change in diet is perhaps somewhat unexpected The government investigators are enthusiastic in the belief that this is only the beginning of fruitful research in the direction of correlating errors of diet with nervous defects In fact, they confidently expect that a number of pathologic conditions observed in nervous diseases may ultimately be explained by some as yet unknown abnormality in diet There is nothing inherently unlikely in the possibility of correlations such as it has thus been attempted to establish

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THE EPIDEMIC OF INFANTILE PARALYSIS

All reports agree in characterizing the outbreak of poliomyelitis now making such sad havoc in New York City and elsewhere as a highly serious emergency both for the affected locality and for the entire country The type of disease is evidently severe, and the mortality already has passed far beyond the figures reached in the great New York epidemic in 1907 The time of year is distinctly unfavorable, summer being usually the period of greatest prevalence Once the disease has started there is generally an increase in the number of cases until checked in some unknown way by the advent of cool weather In the Vermont epidemic of 1914 there were 8 cases recorded in July, 88 in August, 142 in September, 56 in October, and 8 in November The increase that has occurred in New York since June 1, and especially the outbreak of the past two weeks, emphasizes the unpropitious nature of the seasonal conditions It can hardly be anticipated that the task of combating the epidemic will be materially lighter for some weeks to come, and it may become even more formidable than at present

Various conditions seem to threaten a more or less extensive dissemination of the disease It is stated that many thousands of children of well-to-do parents—one estimate going as high as 50,000—were sent or taken out of New York City within the few days following the great development of the epidemic in early July Taking into account the natural vacation exodus at this season, the danger of establishing new foci of infection can be seen to be very great

There are several features of epidemic poliomyelitis that make the spread of this malady peculiarly difficult to combat Certain things important epidemiologically, such as the minimum period of incubation, are not yet cleared up The researches of Flexner and his co-workers have, to be sure, shown that the virus is present in the nasal and buccal secretions and is also eliminated in some cases from the intestines These facts might be thought to indicate that the ordinary measures of isolation and quarantine of frank cases would be quite successful, as in some other diseases, in preventing the spread of the infection Such measures do, undoubtedly, lessen the frequency with which infection is transferred, but unfortunately they are not so efficacious as might be anticipated, because of the apparently large number of abortive, atypical, or ambulatory cases that in one way or another escape recognition and control Undetected cases of poliomyelitis of this sort seem to be especially numerous As in other infections, persons who have recovered from an attack of poliomyelitis may continue to harbor the virus, and under suitable conditions disseminate it for many months Of a different but perhaps even more dangerous type are the healthy virus carriers familiar in connection with a variety of infectious diseases There is no precise information as to how common these healthy carriers of poliomyelitis may be, but there is some reason to believe that they are a not insignificant agency in the diffusion of infection Potentially any one who has been in contact with either a frank case or an abortive case of infantile paralysis may become a carrier Through this agency conceivably the specific microbe may be transferred to yet other healthy individuals until finally it reaches susceptible soil

The important point is that a much larger proportion of cases of poliomyelitis appears to be caused by contact with an unknown virus carrier—convalescent, healthy or atypically ailing—than is the case with most other infections

A particularly perplexing feature of this disease is the remarkable incidence in rural districts This preference for out-of-the-way, isolated localities has been noticed in many regions in which the disease has occurred All that is known experimentally of the localization of the virus and its mode of entrance points to direct contact with infected human beings as the chief, if not the only, means by which the disease is contracted Insects, water supply, foodstuffs, domestic animals and other external agencies have never been proved to have any share in causing infantile paralysis And yet some unknown feature of rural life appears to favor its propagation and spread This rural incidence is very conspicuous in the carefully studied Vermont epidemic "Utterly inexplicable is the fact that many small sparsely settled rural townships off from main thoroughfares were severely visited Many times the first case in a town occurred in families whose members had not been away from home for several weeks and who had received no suspicious visitors"[1] In harmony with such observations are the facts that the more densely populated towns where contact is presumably more frequent often suffer less during an epidemic than the thinly settled districts near them In the Vermont outbreak of 1914, the village of Barton, with a population of 1,300, had twenty-three cases, while Burlington, with over 20,000 inhabitants, had but thirty-two, or about one tenth as many in proportion to the population The apparent conflict between the facts of observation and experimentation needs further elucidation Why are there not more cases of poliomyelitis in localities where opportunities for contact are numerous than where they are few?

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[1] Caverly Bull Vermont State Board of Health June 1 1916

In spite of such puzzling questions, the best results in control have been obtained by the ordinary methods of isolation At present the methods available for fighting the spread of infantile paralysis are those made familiar in many other infections Every frank case and every suspected case should at once be reported to the health authorities All cases of even slight illness in young children should be carefully handled with reference to the disinfection of discharges from the nose and mouth, and the patients, if necessary, should be placed under expert supervision Any convalescent or any person who has been in contact with the disease must be regarded as a possible carrier of infection Opportunities for the contact of large numbers of children, as at parties, picnics and moving picture shows, should be avoided so far as possible Such are the methods that are suggested by our present confessedly imperfect knowledge, and measures of this character are being carried out energetically in New York The outcome of the work of the municipal, state and national health authorities in New York will be anxiously awaited The situation could not be in better hands It may be confidently expected that some additional knowledge of the most effective way of combating this baffling infection will be soon forthcoming

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GIVE THE PROFESSION AND THE PUBLIC THE FACTS

When the long drawn out libel suit, in which the American Medical Association was recently involved, came to a close, and the "patent medicine" company was awarded one cent damages, The Journal received dozens of letters and telegrams congratulating the Association on the outcome of the trial The number of condolatory letters received in this connection could be numbered on the fingers of one hand The attitude of medical journals toward the outcome of the case will probably vary in about the same proportion as that shown in personal communications The *Journal-Lancet* in its July 1 issue offers condolences to the American Medical Association and declares that the verdict is "a very decided victory for the 'patent medicine' association" Right there we beg to differ with the *Journal-Lancet* and reiterate that the outcome of the case was a moral victory for the Association The *Journal-Lancet* further declares that the verdict "throws the burden of the court costs upon the American Medical Association," but here again, our lugubrious contemporary is in error Continuing its jeremiad, that publication questions "whether it pays to attack a 'patent medicine'" or, if that be unavoidable, "is publicity the way to accomplish the true end?"

The Journal believes — and has consistently acted on that belief — that publicity is the only rational means of attacking the nostrum evil, whether of the "patent medicine" or of the "ethical proprietary" variety Any attempt to put an end to the evils connected with the business by dealing in generalities is bound to fail Until the public is given definite and specific facts no great strides will be made in preventing unscrupulous cupidity from preying on the sick and suffering That The Journal's methods of giving the widest possible publicity to the results of its investigations of fraudulent, dangerous or worthless nostrums have borne fruit is a matter of common knowledge

One of the hardest problems the Association had to meet in defending itself in the recent suit came, not from the assaults of its avowed enemies, but from the action of those who might have been assumed to be its friends Many times since the libel suits in question were started, the statement has been made that if the Association lost it would be due to the medical profession, and not to the "patent medicine" interests The fact that members of the medical profession, many of them in their county and state organizations, and not a few of them actually Fellows of the Association, came to the defense of the very interests that were fighting the Association, could not help but have its effect on a jury of laymen It is because no small part of the medical profession is itself still under the blight of the "patent medicine" business — albeit the preparations in question are euphemistically spoken of as "ethical proprietaries" — that the "patent medicine" interests were able to enlist — at a price — the help of men who were, ostensibly, so technically trained and educated as to be above such temptation

And it is pertinent here to say that one of the most potent reasons for the continuation of this state of affairs lies with a certain type of medical journals, a class to which the *Journal-Lancet* belongs Can it be that the *Journal-Lancet* is opposed to publicity in dealing with the "patent medicine" evil because it derives no small part of its advertising revenue from products to which The Journal has given some unwelcome publicity? Possibly it is to be expected that so long as the *Journal-Lancet* sells its own pages to such "patent medicines" as "Angier's Emulsion," "Fellows' Syrup of Hypophosphites," "Ergoapiol," "Glyco-Heroin," etc, it will deplore the methods of the American Medical Association in dealing with the nostrum evil

The *Journal-Lancet* opines that "the American Medical Association will probably not be discouraged" by the verdict and "will probably go on in spite of a temporary defeat" It will But the *Journal-Lancet* feels that the Association cannot go on "unless it has the full support of the medical profession and the support of the people behind the doctors" The Association has the support of the better part — numerically and intellectually — of the profession and is rapidly gaining the support of the public It can and will go on in its work It would move more rapidly if all physicians and all medical journals were true to the best traditions of the profession they represent

ECZEMA AND PROTEIN HYPERSENSITIVENESS

There has been a tendency of late to seek an explanation of certain puzzling forms of hypersensitiveness of the organism in the directions indicated by modern studies of anaphylaxis Among the phenomena put into this category are such idiosyncrasies as occur in persons susceptible to urticaria, vomiting or angioneurotic edema after the ingestion of certain foods Hay-fever and allied conditions have been investigated from the standpoint of an acquired hypersensitiveness to pollen protein Attacks of asthma have been charged with an anaphylactic origin, owing to the resemblances between their manifestations and those seen in animals which have been tested after special sensitization Fagopyrism (buckwheat poisoning) and other forms of exceptional susceptibilty to special articles of diet have furnished evidence that they may often be interpreted as conditions of hypersensitiveness to the proteins of certain foods The outcome has been the introduction of methods of testing for a state of hypersusceptibility to various substances by application of minute quantities of suspected proteins to the scarified skin or by intracutaneous injection A positive reaction is shown by the appearance of an urticarial wheal or of marked edema or erythema at the point of examination

Blackfan[1] has recently called attention to the well known observation that many children, the subjects of asthma, suffer from eczema in infancy or early childhood He states that a history of eczema in early life is nearly always the rule with patients who are unable to take different foods, such as eggs, shellfish, pork, etc, on account of urticaria and edema and sometimes asthma It is much more than a coincidence According to observations made at the Harriet Lane Home and Department of Pediatrics of the Johns Hopkins University, patients without eczema very rarely give a positive reaction to protein Of forty-three patients without eczema, only one showed any evidence of susceptibility to protein by cutaneous and intracutaneous tests Of twenty-seven patients with eczema, twenty-two gave evidence of susceptibility to proteins Egg white, cow's milk and woman's milk were the substances that most frequently caused a reaction If there was a reaction from one protein there usually was a reaction from several

These coincidences may be accidental, or there may be some etiologic relationship between protein sensitization and eczema Blackfan has attempted to apply dietary treatment or restrictions in harmony with the responses to the tests He states that the removal of some or all of the animal proteins from the food brings about great improvement in some cases of eczema in older children and adults With infants it is not successful, first, because it is impossible to feed an infant for a long time on a diet that contains no animal protein, without the risk of seriously affecting his nutrition, and second, because there is a strong tendency for the eczema to return, even though a protein-poor diet produces early improvement, and even though the protein-poor diet is continued Useful observations in this field are only beginning to be collected with the accuracy that rational employment of therapy based on the results obtained really demands It is not unlikely, however, that the new leads, fortified by further statistics furnished by numerous rigorously controlled cutaneous tests, will open a way to real progress in the management of certain rather intractable conditions which have heretofore been treated in a decidedly empiric way

Current Comment

UNEQUAL DISTRIBUTION OF MONEY FOR MEDICAL EDUCATION

Prior to fifteen or sixteen years ago, gifts for medical education were few and far between, in fact, were scarcely heard of Since that time, however, donations to medical schools have been gradually increasing both in size and in frequency Since then, citizens of various localities have shown their increasing interest in medical education by responding more readily and generously to requests for financial assistance by local medical colleges, state legislatures are making larger appropriations for state medical schools, and individuals making donations to medical schools during the last fifteen years not only have increased in number but also are giving larger sums Such gifts have increased from a few thousand dollars in each instance to hundreds of thousands, and, in the last three or four years, gifts of millions have been frequent Thus far, however, donations have been made under the stress of the moment to individual colleges and not in accordance with any national plan for the financing of medical education As a consequence, some medical schools have received large sums, while others, perhaps equally deserving, still lack funds necessary to provide even the barest essentials for medical teaching This is particularly true in some of the smaller or thinly populated states which cannot provide large sums for medical education It is also true in other states where private universities, without state aid, are performing the function of state universities Some of these institutions particularly need and deserve generous financial aid They have secured better teachers, improved their laboratories, and increased their equipment to a commendable degree Some have adopted higher entrance requirements, knowing that such action would reduce their enrolment of students and, correspondingly, their financial income There should be some method whereby these deserving schools might share in the generosity of those having money to give for medical education This thought is worthy of consideration by organizations which have been given the privilege of distributing large funds for education, such as the Carnegie Foundation for the Advancement of Teaching, the General Education Board, and the Rockefeller Foundation

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[1] Blackfan K D Cutaneous Reaction from Proteins in Eczema Am Jour Dis Child, June 1916 p 441

THE PITUITARY BODY AND RENAL FUNCTION

In three cases of diabetes insipidus studied by Motzfeld,[1] the subcutaneous injection of pituitary extract was followed by a marked decrease in the quantity of urine passed and an increase in its concentration This effect, which was not permanent, could be maintained by giving from two to five injections in twenty-four hours The anterior lobe, however, was found to have no effect in controlling the diuresis He would conclude that diabetes insipidus is due to a lowered functional activity on the part of the posterior lobe of the pituitary body, and not to malfunction of the anterior lobe This conclusion is in accord with the results of the experiments, and also with the fact that, in a number of cases of diabetes insipidus, definite lesions in the posterior lobe of the hypophysis, as secondary tumors, have been demonstrated He also observed the effect of pituitary extract in diseases other than diabetes insipidus, finding in twenty-one cases that the quantity of urine passed was diminished for periods varying from two to four hours, in one instance for a much longer period Epinephrin given simultaneously with pituitary extract was not antagonistic to the action of pituitary extract From these observations it is evident that the pituitary body exerts a constant physiologic influence on renal function

THE IDENTITY OF THE TRYPANOSOMES

Central Africa is a country abounding in wild game, whose protection from extermination has been one of the principal solicitudes of the governments of that region Nor has that attitude been dictated by scientific or humanitarian considerations On the contrary, the wild game of Africa is of the utmost economic importance to its peoples When, therefore, we find a scientific commission recommending the destruction of all wild game over the whole of the tsetse fly area, which is considerably larger than the United States, one would naturally expect to find the grounds for such recommendation absolutely sound Such a recommendation was made by the sleeping sickness commission of the Royal Society, it is based on the alleged identity of *Trypanosoma brucei,* which infests game, with the trypanosomes causing disease in man in Nyasaland However, investigation of the grounds for this identification shows that they are hardly sufficient to justify so drastic a measure as the wholesale destruction of the wild game of central and eastern Africa The decision of the commission has been seriously attacked by Maynard,[1] statistician and clinician to the South African Institute for Medical Research Maynard traverses all the grounds for this supposed identification of these trypanosomes, and shows that, on the whole, even the evidence adduced by the commission goes toward establishing the nonidentity of the organisms in question The greater part of the pamphlet is taken up with an elaborate mathematical analysis of the curves plotted from the morphologic characteristics of the different organisms The commission had relied on mere inspection of these curves in judging of their identity Maynard and Pearson have shown that on proper analysis the seeming similarity of the different curves disappears, and it becomes highly probable that in several instances the strains examined by the commission were impure

SYNTHETIC SUBSTITUTES UNDER THE HARRISON LAW

The Harrison Narcotic Law, as is now well known, restricts the manufacture, sale or dispensing of "opium or coca leaves or any compound, manufacture, salt, derivative or preparation thereof" to persons registered under the act The language quoted is from Section I of the law In all other sections, with a single exception, the drugs covered by the law are referred to as "the aforesaid drugs" In Section VI, however, after providing for the exemption of preparations containing minimum quantities of these drugs, the law exempts from the exemption "liniments, ointments and other preparations which contain cocaine or any of its salts or alpha or beta eucaine or any of its salts or any synthetic substitute for them" On the legal theory that a section of a law could be interpreted by a succeeding section, if the succeeding section were more explicit and illuminating in its verbiage, the Treasury Department issued Treasury Decision 2194, placing "alpha and beta eucaine or any of their salts or any synthetic substitute for them" under the provisions of the law To this ruling, the Farbwerke-Hoechst Company, the manufacturers of novocain, a synthetic substitute for cocain, took exception and, by agreement, a test case was argued before the United States District Court of New York It is reported that the court took the case from the jury and ordered a verdict for the Farbwerke-Hoechst Company, on the ground that the text of the law did not include synthetic substitutes except in Section IV, where it was without force as far as the general construction of the law is concerned This ruling is an important one, and it is probable that the case will be taken to the higher courts

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[1] Motzfeld The Pituitary Body and Renal Function, Boston Med and Surg Jour, 1916, c[illegible] 644

[1] Maynard The Trypanosomes of Sleeping Sickness, 1915

Infant Mortality and Ignorance—In those countries where the marriage document is signed with X, instead of a signature, there is the highest infant mortality In these countries there is a large proportion of women who have never been educated, and who are consequently ignorant not only about general matters, but also about matters concerning the proper care of their infants —Ashby, Infant Mortality

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities, new hospitals, education, public health, etc)

ALABAMA

Full Time Health Officer—It has been decided that Talladega will have a full time health officer, to be selected by the Talladega County Medical Association, with a salary of $3,000

Mastin Jubilee—The faculty and students of Spring Hill College, Mobile, paid tribute to Dr William M Mastin, Mobile, on the occasion of the silver jubilee of Dr Mastin's connection with the college as health guardian of the faculty and students

Personal—Dr Cecil D Gaston has been appointed city health officer of Birmingham, succeeding Dr Russell M Cunningham, resigned——Dr Burdett L Arms, Galveston, Texas, has succeeded Dr Philip B Moss as director of the State Laboratory and Pasteur Institute, Montgomery The position has been temporarily filled by Passed Asst Surg Joseph R Ridlon U S P H S, pending the appointment of a successor to Dr Moss—Dr Thomas F Dryer, Huntsville, has been elected whole time health officer of Huntsville and Madison County

Hospital News—The section of St Margaret's Hospital which has been used for negro patients will be much improved and will be converted into a section for the treatment of white patients, and an additional two story building for the care of negro patients, is being erected at a cost of $25,000——Work is about to begin on a four story hospital at Gadsden to be known as the Gadsden Infirmary The building is to be erected by Dr James E Leach, Gadsden and will cost $30,000——The new hospital for negroes at Huntsville has been opened for the reception of patients——Two hospitals are being built in Dothan at a cost of about $25,000 each One is being erected by Dr Mercer S Davie and the other by Dr Earle F Moody, both of Dothan

DISTRICT OF COLUMBIA

Appointment to School Board—The term of Dr Creed W Childs as member of the Board of Education of the District of Columbia having expired on the 30th of June, the Supreme Court of the District of Columbia, the appointing body, announced the appointment of Dr J Hayden Johnson (colored) to succeed Dr Childs The term of service is three years Dr Johnson was formerly president and is now chairman of the committee on public health of the medical society He is also state vice president of the National Medical Society

Physicians Ordered to Texas—A large number of officers of the Medical Corps and of the Medical Reserve Corps have been ordered to proceed at once to Fort Sam Houston, Tex, and other points along the Mexican border for duty In the list are First Lieuts Clarence S Ketcham Charles W Riley, Robert P Williams, Roy K Evans, Percy J Carroll, Charles H Hecker, John P Beeson, Paul E Bowers Arthur W C Bergfeld, Bacil A Warren, Clarence Gunter, John H Beckert, J G Ellis, Jr, Thomas C Savage, Ernest C Dalton Fred T Koyle, Isaac W Brewer, Lester L Roos, Louis D Mead, and Frank E Winter

Memorial Planned to Maj Walter Reed—A fitting memorial to Maj Walter Reed of the army, the discoverer of the yellow fever mosquito and for years a resident of Washington D C is planned for the campus of the University of Virginia, of which he was a graduate, according to an appeal sent out in the current alumni journal of that institution Each nation, it is said which has been directly benefited by Major Reed's work, would be glad to contribute a block of stone, from which the memorial would be built Each block of stone could be carved with the name of the contributing nation A number of suggestions as to the form the memorial should take have been advanced

GEORGIA

Higher Entrance Standard—A letter just received from the Atlanta Medical College states that, commencing Jan 1, 1918 two years of college work will be required for admission to that institution

Increased Entrance Requirement—An official communication from the University of Georgia, Medical Department, states that two years of college work will be the entrance standard of that institution on and after Jan 1, 1918

Personal—Dr Lee Smith, Dublin, has been appointed a member of the staff of the Medical Department of the Southern Pacific Railway Company with headquarters at the Southern Pacific Hospital, San Francisco——Dr James J Martin, Atlanta, has been appointed superintendent of the City Contagious Disease Hospital, Atlanta, succeeding Dr Cornelius E Ware, term expired

ILLINOIS

Infantile Paralysis—New cases of infantile paralysis have been reported in Christopher, Gibson City, Streator, Kankakee and near Oregon It is said that there have been several cases of the disease recently at Decatur

Personal—Dr Edward A Morris, Springfield, has been commissioned first lieutenant, M C, Ill N G, and assigned to duty with the Fourth Infantry——Dr Robert R Smith, Mount Vernon, has been appointed superintendent of the Alton State Hospital

Public Health and Welfare Association Organized—At a meeting of the representatives of medical, health and social organizations and municipal health officers, held in Urbana, June 26, the organization of the Illinois Public Health and Welfare Association was perfected and Dr John A Robison, Chicago, was elected president

Chicago

Return from War Zone—Dr George G Davis has returned after a considerable period spent in English war hospitals, where he achieved the rank of lieutenant-colonel in the British army——Dr William Arthur Clark, director of the American Red Cross unit at LaPanne, Belgium, for several months, has returned to Chicago

Personal—Dr Arthur Dean Bevan was given the honorary degree of Master of Arts by Yale University, June 21——At the fifty-eighth annual commencement of Northwestern University, the honorary degree of Master of Science was conferred on Dr Edmund J Doering——Dr Ethan A Gray has been appointed a member of the committee on business management of the Chicago Municipal Tuberculosis Sanatorium

Infantile Paralysis—An appropriation of $5,000 has been made to aid in the prevention of infantile paralysis This fund will be used for the salaries of field physicians who are meeting incoming trains from New York and examining all children on board There is believed to be little danger of an epidemic in Chicago, but all precautions are being taken——The death believed to have been from infantile paralysis is reported by the health department to have been due to another cause

Institute of Medicine Secures Home—Mrs F S Coolidge has donated to the Institute of Medicine of Chicago the house 2636 Prairie Avenue, in memory of her husband, Dr F S Coolidge This gift gives to the institute a permanent home which will enable it to begin the formation in Chicago of a strong medical institution, analogous to the College of Physicians in Philadelphia, the Academy of Medicine in New York and other similar institutions Physicians, medical teachers and investigators who have common professional and scientific interests and ideals will meet here, and thereby the progress of medicine in this center will be advanced It is further anticipated that this house will not only be used for scientific meetings but will also offer facilities for the adequate preservation of books and other objects of medical, historical and scientific interest

Base Hospital Personnel—The personnel of the Chicago Base Hospital Unit No 1 was announced July 10 It will be under the direction of Dr Frederic A Besley The surgical division will consist of Drs Joseph F Jaros, Thomas J O'Malley V David Greer Oak Park Payson L Nusbaum Walter L Stranberg, Joseph J Lebowitz Hammond, Ind, A M Krost, Hyrum Y Richards, and Burt H Hardinger Gays The medical division will consist of Drs Milton Mandel assistant director Martin R Chase, Leo G Dwan Hugo W Traub David E Markson, Frank Whitmore and William P Honan The personnel of the laboratory division is as follows Drs Alexander A Day, assistant director, James P Simonds pathologist, M L Blumenthal P Ph roentgenologist and George E Meyer, D D S, and Charles W Freeman, D D S, are the oral surgeons of the unit

KENTUCKY

Tuberculosis Work—A meeting of the State Tuberculosis Commission was held in Louisville, June 30, to close accounts for the fiscal year The commission adjourned to meet July 6——May 31, Dr Dunning S Wilson, Louisville, was appointed a member of the Kentucky Tuberculosis Commission, to succeed Dr Everett Morris, LaGrange, term expired

Personal—Dr Hubbard T Buckner, Covington, is now assistant surgeon at the American Ambulance, Neuilly, near Paris——Dr J H Ammonds has been appointed a member of the state extension board——Dr Isaac H Browne, Winchester, has been elected vice president of the Clark County Health and Welfare League, Dr Harvey R Henry, chairman of the committee on care and suppression of tuberculosis, Dr George F Doyle, committee on inspection of schools, and Dr Isaac A Shirley, committee on malnutrition and maintenance of medical clinic for the poor——Dr Lillian H South, Bowling Green, state bacteriologist of Kentucky, delivered an address before the Butler County (Ohio) Medical Society at Hamilton on "Hookworm Disease and Pellagra"

LOUISIANA

Chiropractic Bill Defeated—The bill asking for a state board of chiropractic, recently submitted to the Louisiana legislature, has been reported unfavorably by unanimous vote of the Committee on Health and Quarantine, to which it had been referred This vote was taken after the committee had heard a chiropractor claim that goiter, tuberculosis, diphtheria, pneumonia and like diseases could be easily cured by the chiropractic method of manipulation of the spinal column

Lack of Funds Imperils State Board—The action of the appropriations committee of the house in cutting out the annual appropriation of $50,000 for the state health department leaves the board facing a practical abolition of the department The board appointed Drs Theophilus T Tarlton, Grand Coteau, and William M Perkins, New Orleans, to go before the Senate Appropriations Committee and ask that this important matter be considered The operating fund of the board has, it is said, been exhausted and while there is remaining $20,000, this sum has been appropriated for the establishment of a state tuberculosis sanatorium

Hospital News—The cornerstone of the Corinne Casanas building of the Presbyterian Hospital, New Orleans, was recently laid with appropriate ceremonies The building is to be used as a free clinic for the poor and, when completed and furnished, will represent an expenditure of $40,000, the amount of the bequest left by Miss Casanas The building will be fireproof, and will face Girod Street adjoining the main building The lower floor will be used as a clinic and the upper floor for the dormitory for nurses——The annual report of the New Orleans Eye, Ear, Nose and Throat Hospital was devoted in a great measure to a report of the fight against diphtheria which the hospital has been waging for several years During the last year 4,759,000 units of diphtheria antitoxin were dispensed, and the mortality of diphtheria has been reduced to about 1 5 per cent During the year 7,698 cases were treated, 47,943 consultations were given, and 2,158 of the patients came from other parishes

MAINE

Personal—Dr Thomas Tetreau has been appointed health officer of Portland——Dr John A Donovan, Lewiston, for fifteen years surgeon in chief of the Central Maine General Hospital, celebrated the fiftieth anniversary of his entrance into the practice of medicine, April 30——Dr James P Russell, South Brewer, has been elected president, and Dr Calvin P Thomas, Brewer, a director of the Bangor Antituberculosis Society

MARYLAND

Infantile Paralysis in Baltimore—The first case of infantile paralysis in Baltimore occurred on July 7 and the patient was immediately quarantined Two cases have occurred during the past week in Anne Arundel County, one of the patients dying later at the University Hospital The health officers are using every precaution to prevent an epidemic

Personal—Drs Nathan Winslow, Edgar B Friedenwald and Duncan MacCalman, all of Baltimore, have been ordered to Fort Sam Houston, Texas, for duty with the Medical Reserve Corps——Dr Robert W Johnson, who is first lieutenant, Medical Corps, assigned Fourth Maryland Regiment, has left for Eagle Pass with his regiment——Dr D Tanquam of Java has arrived in Baltimore to undergo radium treatment at Dr Howard A Kelly's Sanatorium——Dr Harry Friedenwald, Baltimore, was elected president of the Federation of American Zionists at its annual session in Philadelphia, July 5

Rockefeller Foundation Explains Purposes of Hygiene Institute—An official bulletin just issued by the Rockefeller Foundation is the first public statement of the principles and purposes of the School of Hygiene and Public Health to be established as an integral part of Johns Hopkins University The school will be opened in October, 1917, as it is estimated that a year will be required for the construction and equipment of the institute and the gathering together of the staff of teachers The school is established in recognition of the urgent need in this country of improved opportunities for training in preventive medicine and public health work, as the facilities for those desiring to devote themselves to preventive medicine and the promotion of public health are as yet inadequate

MASSACHUSETTS

Floating Hospital Begins Work—The Boston Floating Hospital made its initial trip for the season, June 28 The ship sailed at 9 o'clock, returning to its dock at 4 30 in the afternoon G Loring Briggs is manager of the institution, and is assisted by a staff of physicians and seventy nurses

Psychopathic Conference—The fourth annual conference on the medical and social work of the Boston Psychopathic Hospital was held, June 10, under the auspices of the Boston State Hospital The entire institution was open to public inspection, and at the conference Mr Henry Lefavour, chairman of the board of trustees, presided Addresses were made by Dr Elmer E Southard of Harvard Medical School, Dr Herman M Adler, chief of the staff of the hospital, Dr Elisha H Cohoon, administrator of the institution, Dr Harry C Solomon, special investigator for the State Board of Insanity, Mr R M Yerkes, psychologist for the hospital, and Dr Thomas W Salmon, New York, medical director of the National Committee for Mental Hygiene

Personal—Dr Frank S Atwood, Salem, has been renominated as medical examiner of Essex County——Dr Frank J Wheatley, North Abington, has been appointed, by the governor, chairman of a commission to investigate the use of habit-forming drugs——Prof Selskar M Gunn, director of the division of hygiene of the state department of health, resigned, June 23, to take effect August 31 Dr Lyman A Jones, Swampscott, will succeed Professor Gunn——Dr J Erle Forrest, Franklin, who has been in the employ of the Serbian government for several months, has returned after an interesting trip through Bulgaria, Roumania, Russia, Scandinavia and England——Drs Elliott P Joslin, Francis M Rackemann, William W Howell and Charles D Easton, Newport, have been elected councilors of the Harvard Medical Alumni Association

MICHIGAN

Personal—Dr Charles A Lenhard, Detroit, has been reappointed surgeon-general of the International Order of Knights of St John——Dr D Emmett Welsh has been appointed a member of the Grand Rapids Board of Health——Dr William A Wilson, Detroit, has been appointed field superintendent of the Michigan Child Welfare Congress——W S Kellogg, Lapeer, has been appointed assistant secretary of the state board of health——Dr Victor C Vaughan, Ann Arbor, delivered the principal address before the Montana Health Officers' Association at Miles City, July 10

Tuberculosis Survey of Houghton County—The state health experts in charge of the health survey in Houghton County held free examinations in Houghton, June 27 and 28, in the court house, in Hancock, June 29 and 30, in Germania Hall, in Calumet, July 5 and 6, in the city hall, in Laurium, July 6 and 7, in the city hall, and one day clinics in Mohawk, July 3, at St George's Hall, and at Lake Linden, June 27, at McKinley School——A special meeting of the Houghton County Medical Society was held at Houghton at the Red Jacket town hall, June 28, at which Dr Edwin R Van der Slice, Mason, spoke on "The Early Diagnosis of Pulmonary Tuberculosis," and Dr William DeKleine, Lansing, director of the tuberculosis survey, spoke on "The Scope of the Tuberculosis Survey?"——A tuberculosis survey will start in Sault Ste Marie, September 25

MINNESOTA

Southern Minnesota Physicians to Meet—The midsummer meeting of the Southern Minnesota Medical Association will be held at Rochester, August 1 and 2, under the presidency of Dr E Starr Judd, Rochester The program includes, in addition to the papers to be presented, surgical clinics at St Mary's Hospital and the Mayo Clinic building, and demonstrations in the laboratories of the latter

Extermination of Mosquitoes—Prof C W Howard of the state farm is in charge of sixteen University of Minnesota students who, under his direction, are endeavoring to exterminate mosquitoes in a section of Minneapolis covering 8 square miles The work includes the covering, screening and destroying of tin cans, rain barrels and other water containers and the oiling of stagnant pools and swamps

Personal—Dr Charles H Mayo, Rochester, was the guest of honor at a banquet, June 22, given by the citizens of Rochester in recognition of Dr Mayo's election as president of the American Medical Association A silver loving cup was presented to Dr Mayo——Dr Mayo was also the guest of honor of the Knox County Medical Society at Mount Vernon, Ohio, June 19, and on the same day he was given an honorary degree by Kenyon College——Dr Oliver S Olson, for four years surgeon in charge of the infirmary of the Duluth Steel Plant, has resigned and will devote himself to private practice——Dr Gilbert J Thomas, for seven years a member of the Mayo staff at Rochester, has moved to Minneapolis——Dr Orville C Trace, Little Falls, is reported to be seriously ill as the result of a cerebral hemorrhage

MISSISSIPPI

Health Survey of Columbus—Surg Rudolph H von Ezdorf, U S P H S, and Sanitary Engineer J A A LePrince have recently completed a health survey of Columbus They submitted to the mayor and city council a report of their work, together with a map showing infected places and breeding points and recommendations regarding the betterment of conditions as regards malaria

Tuberculosis News—Dr Walter H Rowan, formerly state sanitary inspector, has been elected superintendent of the Mississippi Tuberculosis Sanatorium, which is to be established under authority of the last legislature The legislature appropriated $25,000 for building the institution, and a cash donation of a similar amount and a site of 270 acres has been made by a citizen of Hattiesburg——The Lauderdale County Tuberculosis Hospital has been transferred to the Earnest Workers Circle of King's Daughters, Meridian

MISSOURI

Personal—Dr Ralph McReynolds, Knox City, has returned after several months Red Cross service in Belgium——Dr John L Cox has been appointed police surgeon of St Joseph, succeeding Dr Frank G Beard, city physician and police surgeon, who has been appointed health officer of the city——Dr George L McCutchan, physician at the State Penitentiary, Jefferson City, has resigned and has been succeeded by Dr William A Clark, Jefferson City——Dr Thomas F Miller, head physician in the Kansas City General Hospital, has been appointed assistant superintendent of the institution——Dr Oscar L Peak, Springfield, was elected national medical director of the Knights and Ladies of Security at the annual meeting of the national council of that order in Toledo, June 16

St Louis

Free Attendance on Soldiers' Families—Members of the St Louis Medical Society and the staffs of eight hospitals have agreed to render medical and hospital service without compensation to the families of militiamen who have gone to the front A temporary relief committee of the society has opened an office at Room 316, Security Building, Broadway and Olive streets

NEW YORK

State to Fight Poliomyelitis Epidemic—Dr Hermann M Biggs, state commissioner of health, has instructed the health officer of Orange, Rockland, Putnam, Westchester, Nassau and Suffolk counties to report by telegraph every suspected case of infantile paralysis and to enforce the strictest quarantine of the patient A personal letter with reference to the control of the epidemic is to be sent to every physician in the state July 5, responding to calls for assistance in identifying and controlling cases of infantile paralysis reported from the Hudson River counties, State Commissioner of Health Biggs detailed Dr William B May to visit Hudson, Beacon and Kingston——Several suspected cases on Long Island are under inspection by Dr Frank Overton, Patchogue, of the department staff——At Freeport, Long Island, the local health officer is carrying on an extensive campaign of publicity

New York City

Health Board Secretary Retires—Eugene W Scheffer, secretary of the New York Department of Health, has been retired on a pension after twenty-one years of service

Floating Hospital Begins Work—The *Helen C Juilliard*, the new floating hospital, made its first trip, July 5 Trips to Seaside Hospital are made daily The services of this boat are free and no sick child and its mother are denied admission, except in case of contagious disease

Vaccines Sent to Border—The bacteriologists of the department of health are busy filling orders for vaccines for the troops on the Mexican border In addition to typhoid and smallpox vaccines and diphtheria antitoxin, glanders vaccine for testing horses is being sent in large quantities Thromboplastin is also being manufactured in large quantities for use in checking hemorrhage One hundred and fifty-one cubic centimeters of eye mallein have been sent to the Second Field Artillary at Van Cortland Park for use on new horses brought from the West

Faculty Appointments—The following appointments have been made to the medical faculty of New York University clinical professors of surgery, Drs Joseph B Bissell, Thomas A Smith, Walter C Cramp and Arthur M Wright, professor of clinical surgery, Dr William C Lusk, chief of clinic, department of surgery, college dispensary and instructor in surgery, Dr W Howard Barber, instructor in surgery, Dr George Francis Cahill, clinical professor of medicine, Dr Theodore J Abbott, instructor in medicine, Dr Hubert V Guile, clinical professor of cancer research, Dr Benjamin M Levine, assistant professor of bacteriology and hygiene, Dr Charles Krumwiede, and instructor in bacteriology, Miss Mary Smeeton

The American Posture League—This organization held a joint meeting with the American School Hygiene Association in the auditorium of the Horace Mann School Teachers' College, July 5 The program included the following papers

'The Relation of Posture to Health, Dr Eliza M Mosher Brooklyn 'Good Posture as a Condition of Efficient Brain Activity ' William H Burnham Ph D professor of pedagogy and school hygiene, Clark University 'The Work of the American Posture League on School Furniture" Dr Henry Ling Taylor, New York Eye Strain and Posture ' Dr Ellice M Alger New York 'The Relation of Clothing to Posture Dr Linnaeus E La Fetra, New York An X Ray Study of the Effects of Exercise Posture and Dress on the Position of Internal Organs Dr Nathalie K Mankell Buffalo, The Importance of Intensive Work on School Hygiene Lewis M Terman, Ph D professor of education Leland Stanford Junior University Miss Jessie H Bancroft assistant director of physical training in the public schools of New York, demonstrated class room methods for training correct posture

Personal—*Dr Thomas Darlington has been sent to the* Mexican border under the auspices of the National Civic Federation to study the health of the enlisted men of the army and of the organized militia——Dr Arthur Zentler has been appointed visiting dental surgeon to the Lebanon Hospital——Dr Abraham Strachstein has been appointed chief of clinic and clinical instructor to the department of urology, of Cornell University Medical College——Dr Rosalie Slaughter Morton sailed for Liverpool, July 8——Dr Charles S Benedict sailed for San Juan on the Porto Rico liner *Brazos*, July 8——Drs Harry Plotz and George Baehr arrived home, July 7, after a time spent in Serbia, Bulgaria and Austria, during which they have been making further researches in typhus fever——Dr Henry T Coggeshall has sailed for Bordeaux on the French liner *Rochambeau*

The Poliomyelitis Epidemic—The epidemic of infantile paralysis continues apparently unabated For the week ending July 8, 892 cases have been reported, with 205 deaths Thus far the death rate has ranged from 20 to 25 per cent, which is four times as great as it was in the epidemic of 1907 Nearly all the fatalities have occurred in children under 10 years of age, and the largest proportion occurs between the ages of 1 and 3 years A daily list of patients with their addresses is published daily in the newspapers and parents are urged to read the list and to keep their children from the infected localities At the request of the health commissioner the department of licenses has notified all moving picture theaters in the city not to admit children under 6 years of age until such a time as the board of health declares this health menace at an end The department of health will not interfere with the regular summer school classes or with the work of the fresh air funds, or with daily health excursions, such as are conducted by St John's Guild where there is proper medical and nursing supervision All promiscuous gatherings of children which do not include proper medical precautions are disapproved of Sunday schools are expected to provide all the health safeguards that are exacted of all the secular schools At a conference of health officials, held July 6, it was announced that Secretary McAdoo had offered the services of the United States Public Health Service to the city to help stamp out the epidemic The offer was accepted and it was requested that the U S Public Health Service should take up specially the very difficult "carrier" problem and should make both field epidemiologic studies and laboratory studies with animal inoculations A letter will be sent to all large hospitals having well equipped pathologic departments asking them to send material from fatal cases to the department for examination and research study With the increase in the number of cases on Staten Island, it has been thought feasible to request the U S Public Health Service to perform the routine laboratory diagnostic work for the Staten Island cases at its laboratory at the quarantine station There is a need for additional nurses at both the Kingston Avenue Hospital, Brooklyn, and the Willard Parker Hospital July 6, there were 280 cases at the Kingston Avenue Hospital, and seventy-two at Willard Parker The National Red Cross Society is cooperating with the health department and will provide additional nursing service——Telegrams from New York, July 11, announce 195 new cases of infantile paralysis in the previous twenty-four hours, with 32 deaths, an increase of nearly 100 per cent of new cases over the record of the preceding day, and a still larger proportion of deaths Reports from the boroughs show that in Brooklyn there were 155 new cases with 20 deaths, in Manhattan 14 cases with 6 deaths, in Richmond 6 cases with no deaths, in the Bronx 7 cases with 3 deaths and in Queens 13 cases with 3 deaths Thus it will be seen that east of the East River 168 of the 195 new cases occurred and 23 out of the 32 deaths At present the total number of known cases is 1,278——Secretary of the Treasury McAdoo, on Jully 11, asked for an appropriation of $135,000 to be used in the prevention of an interstate spread of infantile paralysis, from New York, and for the comprehensive research work to determine the cause and nature of the disease and the remedy for it Of this amount $85,000 will be expended to prevent an interstate spread of the disease and $50,000 for research work——President Wilson, on July 11, signed the joint resolution of Congress authorizing the use of the government hospitals on Ellis Island for the treatment of anterior poliomyelitis

NORTH DAKOTA

Personal—Dr Robert C Reimche has been appointed local surgeon for the Minneapolis, St Paul and Sault Ste Marie Railroad at Harvey——Dr Herbert J James, Bathgate, is reported to be seriously ill in the Peter Bent Brigham Hospital, Boston

Hospital News—Bids were opened, June 14, for an addition to the Bismarck Hospital to cost about $50,000 This will provide quarters for nurses and sufficient accommodation for patients to increase the capacity of the institution one third——An eight day campaign was inaugurated last month to raise $100,000 to apply on the building fund of the addition to St John's Hospital, Fargo——Improvements have been decided on for St Luke's Hospital, Fargo, to cost $40,000 The new building will be a four story addition to the hospital which will house an obstetric department The new unit will be ready for occupancy about January 1——Nearly $11,000 has already been subscribed for a hospital at McVille, and the institution has been incorporated under the name of Community Hospital The institution will be under the care of Drs Arne O Arneson and Andrew J Paulson

PENNSYLVANIA

Personal—Dr William S O'Neill Sherman, Pittsburgh, sailed from New York, July 8, for Liverpool, to represent the United States Steel Corporation in the research work to be prosecuted by the Rockefeller Institute in the base and field hospitals of the allies——Dr William M Hall, Conshohocken, who has been under treatment at the University Hospital, Philadelphia, is reported to be critically ill——Dr Eileen J Giles, Reading, has been appointed head physician of the Altapass Hospital, North Carolina

Philadelphia

Personal—Dr Henry L Picard, who has for twenty years been a visiting physician to the Wills Eye Hospital, has resigned——Drs Alfred C Wood, John G Leitch and John A Murphy, members of the Medical Reserve Corps of the United States Army, have been ordered to the Texas border

Medico-Chirurgical College Passes Into History—After thirty-six years as an undergraduate school of medicine, the Medico-Chirurgical College closed its doors, June 30 The college buildings have been closed, except the office of the dean The final papers in the merger with the University of Pennsylvania have been signed

Ice Cream Fund for Hospital—Dr Wilmer Krusen of the department of health and charities has asked citizens to contribute to a fund to provide ice cream for patients in the tuberculosis wards of the Philadelphia General Hospital This would cost about $300 to feed them during the months of July and August, twice a week The city cannot provide this money, so Dr Krusen has called on the people to raise a fund

Negro Physicians Meet—The Interstate Association of Colored Physicians, Dentists and Druggists was held in this city, July 13-15 Five hundred delegates from New York, Pennsylvania, New Jersey, Delaware, Maryland, Massachusetts and the District of Columbia were present The meeting was held in the Philadelphia Academy of Medicine Dr Nathan F Mossell of this city is present The committee who had charge of the arrangements were Drs George L Carson, Benjamin Whithers and Charles A Lewis, Philadelphia

TEXAS

Pellagra Commission—The first meeting of the Commission for the Study of Pellagra appointed by the chairman of the Doctors' Luncheon Club, Fort Worth, was held, June 12, under the chairmanship of Dr Wilmer L Allison, Fort Worth

Personal—Dr Oliver H Radkey, Edna, for several years health officer of Jackson County, has resigned and Dr Garrett Hogg has been appointed his successor——Dr Walter H Moursund, Dallas, has been appointed pathologist of the city board of health

Health Survey—The commissioners of Harris County, June 26, made an appropriation of $2,400 for a complete health survey of the county The Rockefeller Commission has appropriated a similar sum and the work will begin during the latter part of August——Dr Platt W Covington, Austin, will be in charge of the work, which will include the inspection of homes, the delivery of popular lectures on germ diseases, especially hookworm and malaria, the inspection of sanitary conditions, and advice to the people of the county regarding health conservation

UTAH

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Soldiers' Families to Have Free Medical Care—At a meeting of the Augusta County Post-Graduate Medical School held at Staunton June 21 a resolution was adopted tendering the gratuitous services of the Augusta County Medical Society to the dependent families of enlisted men serving in the National Guard from Augusta County and the city of Staunton when so requested by a family or any member thereof

Personal—Dr Robert V Palmer Cherrydale has been appointed full time health officer of Alexandria County Drs Richard N Sutton Clarendon and Robert M Slaughter Seminary Hill were also made members of the health board of the county——Dr Albert P Traynham Richmond assistant bacteriologist of the state board of health, has been transferred from the laboratory of the board and directed to complete an inspection of summer resorts and summer resort cities

Loving Cup to Health Board—The members of the board of health of Richmond which went out of existence July 1, were given a silver loving cup by the officers and men of the department, June 26 Chief Health Officer Ernest C Levy made the presentation speech and Dr William T Oppenhimer was made the custodian of the cup, which bore the following inscription "To the board of health of the city of Richmond retiring after ten years of faithful service, from those best able to value that service, the men in the department" On the reverse side of the cup were inscribed the names of the members of the board

New Appointees on State Board—Governor Stuart, June 1, in compliance with an amendment passed at the last session of the legislature which provides for two additional members of the state board of health named Capt W W Baker, Chesterfield County and Guy R Harrison D.D S., Richmond, to serve for a term of four years on the board Under the old statute twelve physicians selected from the membership of the Medical Society of Virginia one from each congressional district in the state and two from the city of Richmond constituted the state board of health Senator West's amendment provided for the addition of two members one a member of the State Dental Association and the other a layman

WISCONSIN

Personal—Dr William W Gregory was elected president of the newly organized board of health of Stevens Point, and Dr C von Neupert, Sr., was reelected health officer

Health Officers to Meet—Health officers of Wisconsin and many physicians and laymen from outside the state will attend the [illegible] annual conference of health officers in the state capitol, Madison August 2 and 3 The program includes a wide range of topics relative to public health administration and questions of sanitation and hygiene

CANADA

Restriction on United States Graduates Removed—At its recent meeting the council of the College of Physicians and Surgeons of Ontario eliminated from its regulations the requirement that graduates of recognized medical colleges of this country must have attended "one or more full winter courses of lectures in one of the regular medical schools in Ontario" before being eligible to take the examination for a license to practice in that province It is reported that a special committee consisting of the education committee and three members of the College of Physicians and Surgeons of Ontario will select a list of "recognized colleges

Personal—Capt Jas Boyd, A M C, Capt Gordon S Fahrni and Capt Walter J Kirby compose the Niagara Camp Medical Board this year——Lieut Col Herbert J Hamilton and Maj Charles I Currie Toronto, are to compose the medical board in connection with the Toronto School fo[illegible]——Capt Charles E Treble, Toronto, has been appointed to the hospital at Exhibition Camp, Toronto——Dr [illegible]ght has returned from Chicago to his home in Toronto——George S Gordon, Vancouver, B C, has [illegible] medical service abroad and will not return until after the war——Dr J[illegible] Taylor Fotheringham, Toronto, has been made a Companion of the Order of St Michael and St George——Dr Harold Y McNaught, San Francisco [illegible] his father in Toronto

Hospital News—Announcement is made of the [illegible] the Canadian Hospitals Commission as a branch of the Canadian Expeditionary Forces with [illegible] in connection with convalescent homes and military [illegible] commission a new hospital unit organized for the purpose of [illegible] administration and command It will [illegible] divisions one for each military district [illegible] hospital or convalescent home will be [illegible] and a subordinate officer subject to the [illegible] in Ottawa The new unit will be [illegible] Colonel Sharples, Quebec——A new [illegible] Ont was opened, June 29 It was [illegible] bequest of Mr John Helm——[illegible] Hospital at Bushey Park, England [illegible] furnished by the Canadian Red [illegible] the name of one of the king's [illegible]

Ontario Medical Council—The [illegible] Ontario Medical Council was [illegible] of June Dr Edmund E King [illegible]ident and Dr H Wilberforce [illegible] registrar-treasurer One of the [illegible] meeting having to do with [illegible] adoption of a resolution [illegible] Hamilton, Toronto, that the [illegible] of Ontario desired to place [illegible] the discovery of serum therapy [illegible] Grant in the County of C[illegible] in 1861, and the credit [illegible] London, May 20) "We [illegible] glory achieved by our [illegible] country, and to gain the [illegible] medical science as a rec[illegible] our institutions of learn[illegible]

Clause 51 of the Ontar[illegible] cussed, the president [illegible] profession in [illegible] physician [illegible] dozen of ale[illegible] the profess[illegible] this [illegible] to it with [illegible] medical [illegible] farmed out [illegible] in for [illegible] whole m[illegible] law and [illegible] by Dr A[illegible] is no [illegible] licensed [illegible]

New [illegible] Ame[illegible] the [illegible] of I[illegible] ing [illegible] Fran[illegible] pre[illegible] Ky, [illegible] delp[illegible] and [illegible] don [illegible] the [illegible] of [illegible] and [illegible] and Bon[illegible] Cl[illegible]

[illegible] Men may be [illegible] or the abdomen [illegible] reflex causes [illegible]ches, dead with [illegible] against the trench [illegible] to the tremen[illegible]ollows a relative [illegible] been ingeniously [illegible] death much as in [illegible]ressures of several [illegible] be multiple areas [illegible] the sudden release [illegible]pended in the blood [illegible] bubbles which block [illegible]art action

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[illegible] to exert themselves after being [illegible] equipment, loosen clothing, and [illegible] to favor lung drainage Treat[illegible]as, atropin and cardiac support [illegible]us burns from injuries incident [illegible]plosions or from the flame pro[illegible] which throw a burning liquid nearly [illegible]use deep sloughing of exposed parts [illegible] most feared complications are gas [illegible]aerobic bacteria, with which the highly [illegible]he fighting area teems, tetanus, and sec[illegible] from vessel sof[illegible] As a rule the [illegible]al con[illegible] withstand battle [illegible] to exhibi[illegible]ative powers and [illegible]ths for [illegible] endurance They [illegible]d of [illegible]olic drink Anti[illegible] in [illegible] wounded man is [illegible] is [illegible] forehead or wrist [illegible]ible [illegible] the base hospital [illegible] on in [illegible] card is [illegible] classes or with the work of the fresh air funds, or with daily health excursions, such as are conducted by St John's Guild where there is proper medical and nursing supervision All promiscuous gatherings of children which do not include proper medical precautions are disapproved of Sunday schools are expected to provide all the health safeguards that are exacted of all the secular schools At a conference of health officials, held July 6, it was announced that Secretary McAdoo had offered the services of the United States Public Health Service to the city to help stamp out the epidemic The offer was accepted and it was requested that the U S Public Health Service should take up specially the very difficult "carrier" problem and should make both field epidemiologic studies and laboratory studies with animal inoculations A letter will be sent to all large hospitals having well equipped pathologic departments asking them to send material from fatal cases to the department for examination and research study With the increase in the number of cases on Staten Island, it has been thought feasible to request the U S Public Health Service to perform the routine laboratory diagnostic work for the Staten Island cases at its laboratory at the quarantine station There is a need for additional nurses at both the Kingston Avenue Hospital, Brooklyn, and the Willard Parker Hospital July 6, there were 280 cases at the Kingston Avenue Hospital, and seventy-two at Willard Parker The National Red Cross Society is cooperating with the health department and will provide additional nursing service——Telegrams from New York, July 11, announce 195 new cases of infantile paralysis in the previous twenty-four hours, with 32 deaths, an increase of nearly 100 per cent of new cases over the record of the preceding day, and a still larger proportion of deaths Reports from the boroughs show that in Brooklyn there were 155 new cases with 20 deaths, in Manhattan 14 cases with 6 deaths, in Richmond 6 cases with no deaths, in the Bronx 7 cases with 3 deaths and in Queens 13 cases with 3 deaths Thus it will be seen that east of the East River 168 of the 195 new cases occurred and 23 out of the 32 deaths At present the total number of known cases is 1,278——Secretary of the Treasury McAdoo, on Jully 11, asked for an appropriation of $135,000 to be used in the prevention of an interstate spread of infantile paralysis, from New York, and for the comprehensive research work to determine the cause and nature of the disease and the remedy for it Of this amount $85,000 will be expended to prevent an interstate spread of the disease and $50,000 for research work——President Wilson, on July 11, signed the joint resolution of Congress authorizing the use of the government hospitals on Ellis Island for the treatment of anterior poliomyelitis

NORTH DAKOTA

Personal—Dr Robert C Reimche has been appointed local surgeon for the Minneapolis, St Paul and Sault Ste Marie Railroad at Harvey——Dr Herbert J James, Bathgate, is reported to be seriously ill in the Peter Bent Brigham Hospital, Boston

Hospital News—Bids were opened, June 14, for an addition to the Bismarck Hospital to cost about $50,000 This will provide quarters for nurses and sufficient accommodation for patients to increase the capacity of the institution one third——An eight day campaign was inaugurated last month to raise $100,000 to apply on the building fund of the addition to St John's Hospital, Fargo——Improvements have been decided on for St Luke's Hospital, Fargo, to cost $40,000 The new building will be a four story addition to the hospital which will house an obstetric department The new unit will be ready for occupancy about January 1——Nearly $11,000 has already been subscribed for a hospital at McVille, and the institution has been incorporated under the name of Community Hospital The institution will be under the care of Drs Arne O Arneson and Andrew J Paulson

PENNSYLVANIA

Personal—Dr William S O'Neill Sherman, Pittsburgh, sailed *from* New York, July 8, for Liverpool, to represent the United States Steel Corporation in the research work to be prosecuted by the Rockefeller Institute in the base and field hospitals of the allies——Dr William M Hall, Conshohocken, who has been under treatment at the University Hospital, Philadelphia, is reported to be critically ill——Dr Eileen J Giles, Reading, has been appointed head physician of the Altapass Hospital, North Carolina

Philadelphia

Personal—Dr Henry L Picard, who has for twenty years been a visiting physician to the Wills Eye Hospital, has resigned——Drs Alfred C Wood, John G Leitch and John A Murphy, members of the Medical Reserve Corps of the United States Army, have been ordered to the Texas border

Medico-Chirurgical College Passes Into History—After thirty-six years as an undergraduate school of medicine, the Medico-Chirurgical College closed its doors, June 30 The college buildings have been closed, except the office of the dean The final papers in the merger with the University of Pennsylvania have been signed

Ice Cream Fund for Hospital—Dr Wilmer Krusen of the department of health and charities has asked citizens to contribute to a fund to provide ice cream for patients in the tuberculosis wards of the Philadelphia General Hospital This would cost about $300 to feed them during the months of July and August, twice a week The city cannot provide this money, so Dr Krusen has called on the people to raise a fund

Negro Physicians Meet—The Interstate Association of Colored Physicians, Dentists and Druggists was held in this city, July 13-15 Five hundred delegates from New York, Pennsylvania, New Jersey, Delaware, Maryland, Massachusetts and the District of Columbia were present The meeting was held in the Philadelphia Academy of Medicine Dr Nathan F Mossell of this city is present The committee who had charge of the arrangements were Drs George L Carson, Benjamin Whithers and Charles A Lewis, Philadelphia

TEXAS

Pellagra Commission—The first meeting of the Commission for the Study of Pellagra appointed by the chairman of the Doctors' Luncheon Club, Fort Worth, was held, June 12, under the chairmanship of Dr Wilmer L Allison, Fort Worth

Personal—Dr Oliver H Radkey, Edna, for several years health officer of Jackson County, has resigned and Dr Garrett Hogg has been appointed his successor——Dr Walter H Moursund, Dallas, has been appointed pathologist of the city board of health

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1 The tissues are unable to separate quickly enough to allow a high velocity bullet to progress through without pushing before it some pieces of clothing or the tissues it traverses, an accumulation of which in its flight produces a larger channel as it nears its exit.

2 If it strikes bone, bullet and bone fragments may act as secondary missiles to enlarge the wound at the exit

3 Rotatory spin of the bullet from the rifling, together with some of the forward motion, is transmitted to the surrounding soft parts, as demonstrated some years ago in Horsley's experiments to cause a larger area of wound channel This explains the comminution of bone and the frequent driving deep into the tissues of bony pieces at right angles to the wound tract

The effects of missiles on bone will be considered at another time Machine guns shoot the ordinary rifle service cartridge, and consequently cause wounds of the same character

Artillery fire is used mainly with two types of shell, the 18-pound high explosive and the shrapnel These shells have a muzzle velocity of nearly 2,000 feet per second a range of 6 500 yards, and a flight duration of from eighteen to twenty-five seconds, exploding both by time fuse and contact In a shrapnel casing, moreover, are placed irregular bullets some one-half inch in diameter, lead or iron, averaging over 300 in number, which on explosion are given a secondary velocity of 250 feet per second and scatter with the pieces of steel shell casing Intense smoke accompanies their explosion from combustion of red amorphous phosphorus and powder so that they can be used as markers for directing further fire, making it possible to shell every square yard of a given area Inasmuch as these shells can be fired at a rapidity of from fifteen to twenty-five a minute one can imagine the rain of projectiles, the noise and force of explosions to which men in the trenches are subjected, and the necessity for dugout shelters in connection with the sand-bag protection in front of a trench In surgical wounds caused by these shells we do not find so many of the bullets, but more often find the pieces of steel casing, so that the high explosive shell which by its concussion will hurl a man 30 feet in the air has become more generally used than the pure shrapnel shell The mere force of its explosion may cause death to the soldier without producing any wound or exposure to repeated shelling, often for several days' duration, may induce a condition known as shell shock or shock shell' leading to extreme neurasthenia The explosion has been measured to have a pressure effect of about 10 tons to the square inch in its direct path Men may be so pressed on one side of the chest (cardiac) or the abdomen by the air vibration that death ensues from reflex causes, or they are found standing upright in trenches, dead with no wounds, possibly having been pressed against the trench wall and squeezed to death Corresponding to the tremendous pressure of the explosion, there follows a relative vacuum formation in the vicinity, and it has been ingeniously suggested that this vacuum may cause death much as in caisson disease on sudden release from pressures of several atmospheres The pathologic condition may be multiple areas of hemorrhage in the brain, or possibly the sudden release of pressure may cause the nitrogen suspended in the blood serum to come out of the solution as bubbles which block end arteries in the brain or impede heart action

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Asphyxiating gases are mostly chlorin or bromin compressed to liquid form and phosgene has been used in some mixtures lately Because they are heavy, they roll along the ground surface and sink into the trenches When inhaled in concentrated form, they may cause death at once, but in milder concentrations they cause cough, eye watering and dizziness Every soldier on active duty is provided with a gas helmet or protection which aims to neutralize the toxic effects of the gas, and has in addition close fitting spectacles which give protection to the eyes After inhalation of the gases a bronchitis quickly develops there is a hypersecretion of mucus, and the alveolar spaces are filled up There may be found an edema of the glottis, or the heart suffers an acute dilatation from efforts to pump blood through the clogged lungs Postmortem examinations verify these findings and show areas of bronchiectases Young men with strong hearts give more promise of surviving exposure, and may last for three or four days before they succumb

The men are cautioned not to exert themselves after being gassed, but to lay aside all equipment, loosen clothing, and lie quietly in a prone position to favor lung drainage Treatment is given with oxygen gas, atropin and cardiac support Occasionally there are serious burns from injuries incident to accidental premature explosions or from the flame projectors (*Flammenwerfer*), which throw a burning liquid nearly a hundred feet and cause deep sloughing of exposed parts

In all wounds the most feared complications are gas infections from anaerobic bacteria, with which the highly fertilized soil of the fighting area teems, tetanus, and secondary hemorrhage from vessel softening As a rule the men are in excellent physical condition to withstand battle and surgical shock and to exhibit recuperative powers and have been trained for months for physical endurance They have also been deprived of much alcoholic drink. Antitetanic serum is used in every case each wounded man is given 1,500 units, and is marked on the forehead or wrist with a T by an indelible pencil, so that the base hospital knows of the injection in case the casualty card is lost high explosive bombs, machine guns and asphyxiating gases To these must be added the missiles from artillery fire, mainly high explosive 3-inch shells and shrapnel The bayonet, sabers and the cavalry lance also cause wounds The bullet of the Teutonic forces is ogivocylindric, and at the present time has been reduced in size to about 8 mm in cross section, with a weight of 10 gm It has a high initial velocity but a lower sectional density than the bullet of the Allies, and is therefore considered ineffectual at ranges when the latter bullet is still dangerous At short range, on account of the rotation induced by the rifling, it has theoretically great explosive effect, and is subject to deformation and fragmentary splitting when striking hard objects In practice this rule does not hold absolutely One finds rifle bullet wounds caused by close range fire which are cleanly penetrating even through the large bones without fragmentation, while I have removed bullets fired at long range which became broken and were stopped in the tissues after striking smaller bones, as the ribs, and had explosive effects Various factors, moreover, as ricocheting, may affect any single gunshot wound, but generally at extreme ranges when a bullet enters and involves the soft parts alone the wound and entrance channel are the same size as the bullet At close range the tendency is toward an explosive effect and complete in and out penetration of the missile The wound of entrance is smaller, and the wound tract is funnel-shaped with the small end directed toward the entrance This characteristic wound is doubtless influenced by the following conditions

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Steel helmets have reduced the number of head injuries greatly, or else modified many of them into less harmful concussions and minor scalp injuries, on which I hope to report later.

Kellogg Speed, M.D., Chicago,
On active service with the British Expeditionary Force in France.

LONDON LETTER

London, June 19, 1916.

The War

THE ORGANIZATION OF THE PROFESSION IN RELATION TO THE ARMY AND THE NEEDS OF THE CIVIL POPULATION

As explained in a previous letter, compulsory military service now applies to the whole male population up to the age of 41, including physicians. The latter have the option of taking commissions in the Army Medical Corps. The question of deciding whether the needs for the civil population allow a physician to be called up is decided by the Central Professional Committee in conjunction with a local professional committee. The procedure is that when a physician is selected for service he receives a notification from the Central Professional Committee, and, if he is of any opinion that his personal or professional circumstances, or any other considerations, would justify his claiming to be left in his civil practice till a later date, or even throughout the war, he must communicate at once to the same central committee. He will then receive from the central committee a statement of its procedure for considering his case, and of any further information which they may require from him, and in due course the committee, after consulting the local committee, and after hearing the physician if he so desires, will make a final decision. In cases in which the physician is on the staff of a hospital or medical school in the London County area, the central committee will hand on the physician's application to the Committee of Reference (appointed by the Royal Colleges of Physicians and Surgeons for the consideration of such cases). If it is decided that the physician is not then to be taken, or not to be taken till some specified later date, he will be informed accordingly by the central committee, and in any event he will be given at least a month's notice of the date of commencing service. If, on the other hand, he is selected, he will be given by the War Office, on the date indicated to him by the central committee, a commission in the Army Medical Corps. His service will on that occasion be for a period not longer (unless he is willing) than twelve consecutive months. Before the war the physician was able at the end of the period of his commissioned service in the Army Medical Corps to return to civil life with no further obligations. But the military service acts make an important difference, for now, on his return to civil life, compulsion still applies to him, and, if he does not at once enroll again, so as to obtain the conditional immunity from calling up, he will necessarily be called up for ordinary service by the military authorities, and will be able to obtain exemption (if at all) from such service only through the procedure described below. He will come again into the position of being among those from whom the Central Professional Committee can select physicians for service in the Army Medical Corps. The physician under 41 who does not enroll voluntarily (under the scheme described in previous letters to The Journal) is liable to be called up for ordinary combatant service. If he desires exemption, his claim will come before the Central Professional Committee, which will decide whether or not he is to remain in civil practice. If it is decided that he should not, he will be offered a commission in the Army Medical Corps (unless considered unsuitable). So far his lot is not very different from the man who has voluntarily enrolled. But there are the differences that he loses the special arrangements as to pay, twelve month periods, and other privileges given to those who enroll voluntarily.

Physicians over 41 but not more than 45 are not liable to compulsory service but they are asked to enroll and undertake to accept a commission in the Army Medical Corps. Finally, the War Office has now extended the age for the entry of physicians into the Army Medical Corps. Men between 45 and 55 are required for whole time service in the United Kingdom so as to set free the younger men for service abroad. A certain number of physicians between the ages of 45 and 55 have volunteered for service abroad and are being sent to the Mediterranean.

THE HIGH PRICES OF FOOD

The price of food has been increased since the war, according to the government report, to the extent of 53 per cent. Comparison of the prices of meat, June 1, with those in July, 1914, shows that, while the increase in the prices of the better cuts of British meat average between 50 and 60 per cent., the cheaper cuts of imported meat have doubled in price. Bacon is nearly 40 per cent. dearer than in July, 1914, and fish averages 86 per cent. dearer. Increases of from 50 to 60 per cent. are recorded for potatoes, flour, bread, cheese and tea. The price of granulated sugar remained about two and a half times that prevailing immediately before the war. Milk and butter show advances of about 30 per cent., margarin an increase of 18 per cent. It is estimated that the average increase in the cost of living of the working classes, taking food, rent, clothing, fuel and light, etc., into consideration, between July, 1914, and the present time is about 40 per cent. However, in consequence of abundant employment at high wages, due to the great demand for munition workers and the scarcity of labor produced by the formation of a huge army, the working classes are better off than before the war. It is the middle and upper classes who are bearing the burden of the war. This increase of prices may be compared with those of Berlin since July, 1914, which amount to 119.8 per cent., and those of Vienna, amounting to 221.5, which, as far as one knows, are not compensated by any increase in wages.

CANADIAN PHYSICIANS ON WAR SERVICE

The patriotism and self-sacrifice which have led a large number of Canadian physicians, many of them holding leading positions, to throw to the winds flourishing practices, the result of years of labor, are remarkable. Among these men may be mentioned Colonel Adami, the distinguished pathologist of McGill University, Colonel Elder, Colonel McCrae; Colonel Archibald, Colonel Cameron, one of the best known surgeons in Montreal, Colonel Findley, professor of medicine in McGill University, and Major Meakins and Capt. Thomas Cotton, the cardiologists, who are now attached to the Hampstead Hospital for the Study of the Soldier's Heart. Toronto has sent, among others, Colonel Primrose, the well known surgeon, and Colonel Cameron, while from Kingston has come Colonel Fotheringham, and from St. John, Col. Murray MacLaren.

The Falling Birth Rate

The falling birth rate has exercised public men so much that in 1913 a national birth rate commission was formed by the National Council of Public Morals to report on its causes and effects. The commission included leading physicians, clergymen, philanthropists and social reformers. For the greater part of the time Bishop Boyd Carpenter was the chairman, and he was succeeded by Dean Inge, both eminent and well known churchmen. The evidence taken by the commission, with the report, forms a volume of 450 pages, which has just been published and must be regarded as the most authoritative work on the subject.

The commission considers the following propositions definitely established:

1. The birth rate has declined one third within the last thirty-five years.
2. The decline is not to any important extent due to alteration in the marriage rate, a rise in the mean age at marriage or to causes diminishing the proportion of married women of fertile age in the population.
3. This decline, although general, has not been uniformly distributed over all sections of the community.
4. On the whole, the decline has been more marked in the more prosperous classes.
5. The greater incidence of infant mortality in the less prosperous classes does not reduce their effective fertility to the level of that of the wealthier classes. The following conclusions, although based on evidence less substantial than the previous ones, are also considered sufficiently well established:
6. Conscious limitation of fertility is widely practiced among the middle and upper classes, and there is good reason to think that in addition to other means of limitation, the illegal induction of abortion frequently occurs among the industrial population.
7. There is no reason to think that the higher education of women (whatever its indirect effects on the birth rate may be) has any important effect in diminishing the physiologic aptitude to bear children.

The commission criticizes the argument that an improvement in the birth rate would be facilitated by such conditions as greater security and regularity of income, with insurance against unemployment among all classes of workers This view, they point out, is not supported by statistics Not only do the more well-to-do classes restrict their families more, but even among certain wage-earning classes the birth rate varies inversely with the income The clerical witnesses were almost all opposed to the use of mechanical and chemical means to prevent conception, but there was not the same unanimity as to the morality of restricting the family in other ways Some of the representatives of religion signed a minority report condemning mechanical and chemical preventives injurious to health, but making a reservation as to methods not injurious to health A number of proposals of an economic character are also put forward to enable a larger population to be supported They include a living wage, bonuses for families under certain conditions, relaxation of income tax, increased facilities for good education adequate housing accommodation at reasonable rents, and measures to encourage the full development of natural resources both at home and beyond the seas Mr Long, the president of the Local Government Board, is about to receive the commission as a deputation, when the report will be presented to him

British Science

In proposing a vote of thanks to Sir Andrew Fisher, Surgeon-General Sir Alfred Keogh, Director-General of the Army Medical Service, said that we had in this country as able and energetic scientific men as any in Europe, and were in many respects far in advance of the scientific men of the world for the simple reason that our men had the invaluable quality of initiative It was our misfortune that our people did not take full advantage of our scientific work Happily, there were some directions in which we had not failed in that sense, as he could testify from the experience he had gained in the work on which he was engaged in this war We had drawn into the fold all the scientific men who could assist us, and what was the result? In our army, large as it was, there were, today, only twenty-two cases of typhoid fever, whereas if we had gone on in the old way there would probably have been 80,000, 90 000 or even 100,000

PARIS LETTER

Paris, June 15, 1916

The War

COMPULSORY ANESTHESIA IN THE MILITARY SERVICE

In a previous letter I noted the instructions which the minister of war issued with regard to the refusal by soldiers of necessary operations or other treatment (The Journal, Aug 21, 1915 p 729) The right to refuse a cutting operation is recognized as absolute from a legal point of view because every such operation implies a certain risk Is this true, however, for simple anesthesia not followed by operation? This question has been raised before the Academie de medecine by Dr Reynier of the Faculte de medecine de Paris He proposes to render compulsory the administration of chloroform to soldiers whenever the physician treating the case shall judge it necessary for the purposes of diagnosis or of treatment At present it is not possible to compel a soldier to submit to anesthesia For this reason it is often impossible to detect malingerers or to demonstrate the hysterical nature of certain contractures, and one is therefore often obliged to discharge men who might well be cured and who are perfectly fit to take their place in the ranks Now, Reynier is of the opinion that, thanks to improved technic, the administration of chloroform presents no longer any real danger In these conditions the respect for the individual will which rules in civil life cannot be held compatible with military discipline

Professor Quenu remarked that postchloroformic sequelae are by no means negligible and that therefore we have no right to ignore the wishes of the patient Professor Kirmisson associated himself with this protest of Quenu's Dr Vaillard, inspector-general of the health service of the army pointed out that it is not possible to compel soldiers to submit to anesthesia in the same manner as they must to vaccination against smallpox or against typhoid, in the absence of a special law such as exists for these other cases In view of the complexity of the question, it has been submitted, on the proposition of Dr Delorme inspector-general of the military health service, to a special commission

LEAD POISONING FROM RETAINED FRAGMENTS OF BULLETS

At a meeting of the Societe medicale des hopitaux, Dr Loeper of the Faculte de medecine de Paris, and Dr Verpy drew attention to the fact that symptoms of poisoning may develop in patients owing to absorption of lead from fragments of lead projectiles retained in the body, especially in the lungs For this reason, though the diagnosis in such cases is sometimes difficult owing to the complexity of symptoms produced by the injury, the presence in the tissues of a lead projectile should not be neglected

AMERICAN SURGICAL DRESSINGS COMMITTEE

The Surgical Dressings Committee, founded in the United States in October, 1914, to distribute surgical dressings gratuitously in the hospitals of France and allied countries has established two sections in France, one at Bordeaux and the other at Paris The latter is installed at rue de la Faisanderie, 118, in a large building kindly placed at the disposition of the committee by Mme G Coulon, and it has recently been visited by M Justin Godart, undersecretary of state for the military health service

Epidemic of Whooping Cough at Paris

A very serious epidemic of whooping cough has prevailed at Paris for some time, causing from twenty to twenty-five deaths a week instead of the mean rate of seven At the Academie de medecine, Dr Paul L Tissier drew attention to the gravity of this epidemic and to the numerous cases which have occurred among adults According to Tissier's own observations in this epidemic, the adult more often transmits the sickness to the child than the child to the adult, which is the contrary of what is usually the case It is therefore necessary in the present circumstances to take precautions to prevent this contagion, especially in the case of soldiers on furlough who may propagate the epidemic among the troops at the front

Death of Dr Dubief

Dr Fernand Dubief, deputy for the department of the Saone-et-Loire, and former minister, has died suddenly at the age of 66 He was formerly director of an asylum for the insane at Marseilles and afterward at Lyons He was elected to the chamber for the first time in 1893 He was reelected at each of the general elections of 1898, 1902 and 1906 He lost his seat in 1910, but was again returned in 1914 He was minister of commerce in the Rouvier cabinet in 1905, and afterward minister of the interior in the same cabinet from Nov 12, 1905, to March 14, 1906 Dubief had a large share in the preparation of the law concerning lunatics as well as in the elaboration of the tariff for medical fees for industrial accidents The latter tariff is therefore known as the Dubief tariff

Death of Dr Rommelaere

The death is announced, at the age of 80, of Dr Rommelaere professor at the University of Brussels, and president of the administration council of that university

BUDAPEST LETTER

Budapest, June 14, 1916

The War

EXAMINATION PRIVILEGES ALLOWED TO MEDICAL STUDENTS DURING THE WAR

The Minister of Public Instruction issued an order, March 6, 1916 according to which medical students who are fit for military service enjoy certain privileges during the war Nominally students who have attended nine semesters and who entered military service up to January 7, this year are entitled to pass their last two examinations during the period from March 15 to May 15 After passing these examinations they will be graduated, and promoted to the rank of medical doctor The military authorities allow eight weeks' leave for this purpose on the production of a certificate signed by the dean, who gives this certificate to every one who can prove that he has finished nine semesters In time of peace every student must attend ten semesters, after which he is entitled to pass the two final examinations If he has passed them successfully, he is given his degree but receives his diploma only after spending one 'practical year' in hospitals which are on the list of the university

WAR MEETING OF THE ROYAL SOCIETY OF HUNGARIAN OCULISTS

At the suggestion of Emil Gross professor of ophthalmology at the Budapest University the Hungarian oculists will meet on Whitsunday in the Budapest Ophthalmologic Clinic, and will discuss questions pertaining to the domain of ophthalmology connected directly with the war trachoma the visual capacity from the point of view of fitness for service at the front, and field injuries of the eyes The committee of the society requested the war and home defense ministers as well as the army authorities to send to this sitting active and reserve military doctors, allowing them five days' leave to enable them to travel to Budapest for this occasion Of course, the request was complied with, even the chief of the German imperial field sanitary service promised to send many oculists and others interested in ophthalmology who could be spared

ETHICS OF FAMILY PRACTICE DURING THE WAR

The Budapest Medical Association passed the following resolution If a doctor attends a family whose physician is engaged in field service, or if a doctor occupies a position in a club or a hospital where his predecessor is in the field, he must regard himself only as a locum tenens To endeavor to get positions held by men with the army is a violation of war medical ethics Half the income accruing from locum tenens work is due to the original holder of the position, of course, expenses can be deducted in full The association requested the public through the newspapers to reserve the position of family physician or reliance doctor (Vertrauensarzt) to the original doctor, now engaged in field service, and to pay the locum tenens the same amount as they paid to the former

THE QUESTION OF POPULATION

Dr G Winter, in a paper before the medical society, said that, owing to diminution in the number of births because of the war, obstetricians and gynecologists will have to regard as their special duty to do everything in their power to work against depopulation They can do this in part by curing patients of gonorrhea and syphilis, which induce sterility in women, and in part by making propaganda against wilfully induced childlessness The second task consists in maintaining the fetus during pregnancy, particularly in preventing spontaneous, artificial and criminal abortion The third task is to protect the child at birth, by increasing the number of properly educated midwives, who take special care in preserving the child's life during labor, and immediately call the doctor if necessary Our aim should not be to save mother or child, but to keep alive both mother and child Finally, the mother should be taught how to live rationally while nursing the baby, and how to nourish children properly

Epilepsy—A Cause for Divorce

According to a decision of the Royal Hungarian Curia, the highest court of justice, epilepsy interferes with the purpose and natural course of marriage Therefore the person suffering from epilepsy should make known his condition to the other person before marriage If he neglects doing so, then the other party is entitled to ask for divorce, and the court will separate all couples when application is made on this ground Of course, it is necessary to prove that the person suffering from epilepsy knew about his illness before marriage

The Number of Students in the Budapest University

In the second semester of 1915-1916, the Budapest Royal Scientific University had 3,067 students, in the same semester of 1913-1914 there were 7,513 The number of medical students amounted to 1,059 (in 1914, 2,994) The increase of the number of women students is noteworthy, in the present half year there are 739 enrolled, among them 266 medical students In 1914 there were 564 female students, with 175 medical students

Honor to Eiselsberg

Francis Joseph has conferred on Prof Dr Anton von Eiselsberg, knight, adviser to the court, and admiral surgeon major, the rank of Order of Leopold Cross with the war decoration This is one of the highest orders with which a medical man can be decorated

Vienna Housing Conference

February 7 and 8, the meetings of the conference on dwelling hygiene were held in Vienna The conference passed a resolution to present a memorandum to the minister of public hygiene to introduce regular control of dwellings For the time being this should be in the hands of the medical officers of the municipalities, but after the termination of the war, special committees should be formed to this purpose Two inspections a year are planned, and will be restricted to town and city dwellings The chief task of the controller will be to discover sanitary defects and to force house owners to repair them If they do not do so, the medical officers will be empowered to have the repairs made at the expense of the house owner

Deaths

Heber Wheat Jones, M D, Memphis, Tenn, University of Virginia, Charlottesville, 1869, aged 67, a Fellow of the American Medical Association, dean emeritus and professor of clinical medicine in the University of Tennessee, Memphis, and the College of Physicians and Surgeons, Memphis, for ten years president of the Tennessee State Board of Health and State Board of Medical Examiners and for eight years president of the Board of Health of Memphis, surgeon in the Tennessee National Guard with the rank of colonel, who was presented with a silver service by citizens of Memphis in 1898, and in 1905 was given a check for $10,000 by the city for his services against yellow fever, one of the most noted sanitarians of the South, died at his home, June 26 At a special meeting of the Memphis and Shelby County Medical Society, resolutions of esteem and affection were adopted and members of the society were named as pallbearers for the funeral

William Evans Casselberry, M D, Chicago, University of Pennsylvania, Philadelphia, 1879, aged 57, a Fellow of the American Medical Association, formerly president of the American Laryngological Association and Chicago Laryngological Association, a member of the National Association for the Study and Prevention of Tuberculosis, American Climatological Association and Physicians' Club of Chicago and a fellow of the American College of Surgeons, one of the most prominent laryngologists of the United States, professor of therapeutics in Northwestern University Medical School from 1883 to 1894 and professor and emeritus professor of laryngology and rhinology since 1894, attending laryngologist and rhinologist to St Luke's Hospital, died at his summer home in Lake Forest, July 11, from angina pectoris

Julius Hayden Woodward, M D, New York City, College of Physicians and Surgeons in the City of New York, 1882, University of Vermont, Burlington, 1882, aged 58, a Fellow of the American Medical Association, professor of diseases of the eye in the New York Post-Graduate Medical School and president of the Faculty Association of the institution, a member of the American Academy of Ophthalmology and Oto-Laryngology, American Laryngological, Rhinological and Otological Society, and American Otological Society, formerly professor of materia medica in the University of Vermont, died at his home, July 2

Walter Gellhorn, M D, Seattle, Wash, University of Munich, Germany, 1904, aged 39, a Fellow of the American Medical Association, who was arrested at Kirkwall, Scotland, Dec 9, 1915, while on his way to join the German Red Cross on the charge of having in his possession military plans and chemical formulas for the use of the German army, and had been held in Edinburgh Castle since that time, is reported to have committed suicide in the military prison at Edinburgh Castle, June 11

David Ottawa Hancock, M D, Henderson, Ky, Kentucky School of Medicine, Louisville, 1891, aged 54, formerly a Fellow of the American Medical Association, a member of the Kentucky State Medical Association and its president in 1912, president of the Henderson City Board of Health and of the Henderson County Medical Association in 1906, died at his home, April 19, from nephritis

Arthur T Bodle, M D, Bellaire, Mich, Chicago Homeopathic Medical College, 1893, Hahnemann Medical College, Chicago, 1905, aged 57, a member of the Michigan State Medical Society, for twenty years physician to the Antrim County Home, member of the Kearney Board of Health, died from heart disease, June 1, while making a professional call

Charles Frederick Nolen, M D, Baltimore, University of Maryland, Baltimore, 1890, aged 47, a Fellow of the American Medical Association, well known as a specialist on diseases of the eye, ear and throat, ophthalmic surgeon to the Baltimore and Ohio System and assistant surgeon to the Presbyterian Eye and Ear Hospital, Baltimore, died, June 30

Archibald M Glass, M D, Booneville, Ky, University of Louisville, Ky, 1885, aged 53, a Fellow of the American Medical Association, secretary of the Owsley County (Ky) Medical Society in 1915, and secretary of the Owsley County Board of Health, died at his home, June 21, from sarcoma of the throat

Franklin Judson Cressy, M D, Granite Falls, Minn, College of Physicians and Surgeons, Keokuk, Iowa, 1877, aged

7, formerly a Fellow of the American Medical Association, a member of the Minnesota State Medical Association, died in St Luke's Hospital, St Paul, June 26

Robert J Gilliland, M D, Easley, S C, University of Maryland, Baltimore, 1883, aged 55, formerly a Fellow of the American Medical Association, a member of the South Carolina Medical Association, died at his home, June 25, from cerebral hemorrhage

Floyd Vernon Brooks, M D, Washington, D C, Jefferson Medical College 1877, aged 60, a member of the Medical Society of the District of Columbia, chief surgeon of the Chesapeake Beach Railroad and Washington Traffic Club, died at his home, June 25

Frederick Buell Willard, M D, Hartford Conn, University of Vermont, Burlington, 1900, aged 42, a Fellow of the American Medical Association and of the American College of Surgeons, died at his home, June 16, from peritonitis following appendicitis

Louis Edward Niles, M D, Springfield, Ohio, Dartmouth Medical School, Hanover, N H, 1884, aged 54, a member of the Ohio State Medical Association and president of the Clark County Medical Society, died at his home, June 24, from pneumonia

Reece Kelso Watkins, M D, Spring City, Tenn, University of Nashville Tenn, 1871, aged 67, a member of the Tennessee State Medical Association, for more than thirty-five years a practitioner of Spring City, died at his home, June 25

Amos W Patterson, M D, Indianapolis, Medical College of Ohio, Cincinnati, 1866, aged 76, formerly a Fellow of the American Medical Association, medical inspector of recruits during the Civil War, died at his home, June 26, from heart disease

George Chambers, M D, Saskatoon, Sask, Eclectic Medical Institute, Cincinnati, 1866, for more than forty years a practitioner of Columbia, Mo, and for the last two years a resident of Canada, died at his home, June 19, from senile debility

Robert A. Hilton, M D, Eldorado, Ark., Louisville (Ky) Medical College, 1894, aged 47, formerly a Fellow of the American Medical Association, a member of the Arkansas Medical Society, died in a hospital in Little Rock, June 24

Mary Ann Chamberlin, M D, Santa Cruz, Calif, Homeopathic Medical College of Missouri, St. Louis, 1875, for sixty-four years a resident of the Pacific Coast and for the last thirty years of Santa Cruz, died at her home, June 26

James Moore Donnelly, M D, Troy, N Y, College of Physicians and Surgeons in the City of New York, 1876, aged 68, for nearly thirty years a practitioner and druggist of Troy, died at his home in North Troy, June 25

Samuel David Booth, M D, Oxford, N C, Medical College of Virginia, Richmond, 1867, aged 75, a member of the Medical Society of Virginia, a Confederate veteran, died at the home of his nephew in Oxford, June 28

William Blundell, M D, Paterson N J, College of Physicians and Surgeons in the City of New York, 1861, aged 80, a member of the Medical Society of New Jersey, died at his summer home in Allensdale, N J, June 30

Nathaniel Alexander Orr, M D, Belmont, N C, University College of Medicine, Richmond 1904, aged 39, a Fellow of the American Medical Association, died at his home, June 21

Milton H Collins, M D, South Charleston, Ohio, Medical College of Ohio, Cincinnati, 1881, aged 62, a member of the City Council of South Charleston for several years, died at his home, June 22

Andrew M Purinton, M D, Kenduskeag, Me, Dartmouth Medical School, Hanover, N H, 1862, aged 78, superintendent of schools of Levant, Me, for twenty years, died at his home June 20

David Thompson Cleland, M D, Harlansburg R D Newcastle Pa, Miami Medical College, Cincinnati, 1877, aged 64, died at his home, June 20, from pulmonary abscess following pneumonia

Frank W Wells, M D, Owingsville, Ky University of Louisville Ky 1869, aged 68, died at his home near Owingsville, about June 20 from tuberculosis of the larynx

Thomas S Young, M D, Partlow, Va, Jefferson Medical College, 1852, aged 86, said to have been the oldest practitioner of Spottsylvania County, died at his home, June 18

John S Neely, M D, Franklin, Ky, University of Louisville, Ky 1872, one of the oldest practitioners of Simpson County, Ky, died at his home, June 19, from senile debility

John Tyler Sweeny, M D, Louisville, Ky, Hospital College of Medicine, Louisville, 1906, aged 36, died at the home of his mother in Louisville, June 16, from tuberculosis

James A Conrad, M D, Cleveland, Homeopathic Medical College of Missouri, St Louis, 1877, aged 70, died at his home, June 7, from cerebral hemorrhage

Grafton W Gardner, M D, Atlanta, Ga, Oglethorpe Medical College Savannah, Ga, 1861, aged 86, died at his home, June 19

Coursin G Oyler, M D, Merwin, Pa, Ohio Medical University, Columbus 1893, aged 51, died at his home, June 19

Walter Jay Bell, M D, Atlanta, Ga, Tulane University, New Orleans, 1891, aged 47, died at his home, June 17

Marriages

Charles Frederick Mahoney, M D, Winthrop, Mass, to Miss Agnes R Driscoll of East Boston, Mass, at South Boston Mass June 28

Walter Irwin Hume M D, Louisville, Ky, to Miss Beulah Lee Thompson of Mackville, Ky, at Springfield, Ky, June 28

Charles Joseph Kickham, M D, Brookline, Mass, to Miss Mary Josephine Keating of Jamaica Plain, Boston, June 28

David Paul Whitmore, M D, Rock Springs, Wyo, to Miss Eva Belle Barber of Spring Valley, Minn, June 28

James Stratton Carpenter Jr., M D, Pottsville, Pa, to Miss Claire Beck Dechert of Schuylkill Haven, Pa, June 23

Henry White Broughton, M D, Jamaica Plain, Boston, to Miss Mary Lawrence Leavitt of Exeter, N H, recently

Lieut Augustus B Jones, M C, U S Army, to Miss Ethel Treen Jones, at Jefferson Barracks, Mo, June 28

Alfred Herman C Carthaus, M D, Thiensville, Wis, to Miss Jennie Kaestner of Plymouth, Wis, June 22

Frank Walker Young, M D Hartford, Ala, to Miss Ida Berryman Bilbro at Clanton, Ala, May 31

Joseph Engel M D Brooklyn, to Miss Adele R Rubenstein of New York City, June 25

Thomas Morrell Armstrong M D, to Miss Helen F Kennedy, both of Philadelphia June 28

Ralph E Robinson M D, Belmont, N Y, to Miss Mabel Gibbons of Wyoming N Y, June 29

Walter Mitchell Atkinson, M D, to Miss Pearl Zell, both of Brockwayville, Pa, April 12

John Otis Cletcher, M D, Anthony, Kan, to Miss Mary M Putnam of Penfield, Ill, June 23

Herbert Scott Pattee, M D, to Miss Barbara Sutcliffe, both of Manchester, N H, June 22

Ludwig Francis Lubeley, M D, Ryegate, Mont, to Miss Marjorie Brislin of Butte, June 21

Robert Foster Fennell, M D to Miss Margarette Street, both of Guntersville, Ala, June 24

Thomas Arthur Pettepiece, M D, Freeport, Ill, to Miss Wilma Pierce of Chicago June 23

Jesse James Beatty M D, Farragut Iowa, to Miss Pearl Snyder of Trenton Mo, June 21

John Robert Wright, M D, to Miss Maycie Worthington, both of Knoxville Iowa June 3

Martin C Gaughan M D, to Miss Margaret V Conway, both of Pittston Pa June 12

Burt Horace Hardinger M D, Gays, Ill, to Miss Elsie Warder of Chicago recently

Harry Caesar Solomon, M D, Los Angeles, to Miss Maida Herman of Boston June 26

Harold William Nimal, M D., to Mrs Goldie Fogler, both of Indianapolis June 23

Miles Martin M D, to Mrs Annie Paul MacNair, both of Boston June 29

Silas C. Blaisdell M D, to Miss Mary E Rose, both of Brooklyn July 1

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

WINE OF CARDUI SUIT

(*Continued from page 112*)

May 19, 1916, Morning

TESTIMONY OF DR EFFIE L LOBDELL (CONTINUED)

CROSS-EXAMINATION BY MR T J SCOFIELD

Dr Lobdell stated that she had used viburnum prunifolium in her practice for nearly twenty-six years She used Hayden's Viburnum Compound and also the dried extract in capsules She gives either the dried extract in capsules or the fluidextract of viburnum prunifolium or combinations with various pharmaceutic preparations She sometimes uses the solid extract for the convenience of the patient She sometimes combines it with gelsemium and helonin and sometimes quinin She practically always gives the viburnum prunifolium in combination

Q —Now I suppose that in your earlier practice you did use, as you say, Hayden's Viburnum Compound? *A* —Yes, sir, I did

Q —Do you know what that is, doctor? *A* —Well, in what way?

Q —That is, what it contains? *A* —Well, valerian, some valerian, and the viburnum, and the alcohol It was for those effects I gave it

Q —What kind of viburnum does it contain, do you know? *A* —Prunifolium, viburnum prunifolium

Q —Are you quite sure that Hayden's Compound contains any viburnum prunifolium? *A* —Well, or the opulus, which is very much the same

Q —That is a different proposition Do you know what it does contain? *A* —I do not remember definitely now I have not used it for about eight or ten years

Q —You have not used it for eight or ten years? *A* —No, no, not since the pharmaceutical houses began making more accurate preparations, of course I have used those

Q —You did not consider that a very active preparation then? *A* —No, sir, it was like all our preparations until the pharmaceutical houses perfected them

Q —What Hayden's Viburnum Compound contained, whether it contained viburnum prunifolium or not, you do not know, do you? *A* —Well, I know that it contained prunifolium, but I know the family and I know the kind of drug I know them in a general botanical way as well

Q —Well, but what kind of viburnum did it contain, doctor? Do you know what kind it contained, whether it had any viburnum prunifolium in it or whether it had simply viburnum opulus or not? *A* —It was supposed to have viburnum prunifolium, because—

Q —How is that? *A* —It was supposed to have viburnum prunifolium in it

Q —I am not asking what it was supposed to have I am asking whether or not you know *A* —Well, at that time the formulas were not given essentially to the public as they are under the Pure Food Act

Q —Well, you do not know then whether it had any viburnum prunifolium or not, do you, any viburnum prunifolium in it? *A* —No, but I do remember that it was taught that it was viburnum prunifolium I remember teaching it

Q —You remember that people supposed it had viburnum prunifolium in it? *A* —Yes, sir, it was so taught

Q —How is that? *A* —It was so taught

Q —Where? *A* —At the College of Medicine, in the pharmaceutical department I remember that very well

Q —Well, was the formula known in your day when you were in college, where it was taught? *A* —I beg your pardon?

Q —When was it that it was so taught? *A* —It was taught in 1891 and before that when I was attending school, because I remember it was in our dispensary and I dispensed it as assistant

Q —It was a secret formula, doctor, was it not? *A* —I beg your pardon?

Q —It was a secret formula, was it not? *A* —Well, I know, but then we were taught in a general way what they contained

Q —I understand, but I say it was a secret formula, was it not? *A* —At that time it was not published

Q —Well, is it published now? *A* —I do not know I have not paid any attention to it in the last ten years

Q —All you know about whether or not there was any viburnum prunifolium in it is the reputation? *A* —Yes, sir

Q —In connection with your use of Hayden's Viburnum Compound of viburnum prunifolium, is your experience based upon your use of it, that is, your opinion? *A* —Yes, sir

Q —Entirely? *A* —Yes, sir, in conjunction with my teaching

Q —What did they—what did your teaching show you? *A* —That it was a correct thing to use and belonged to the class of antispasmodics proper for women

Q —And the experience which you have had in your practice has borne that out, has it? *A* —Yes, sir

Q —So that the opinion which you have given as to the value of viburnum prunifolium is based upon your experience? *A* —Yes, sir, and the best of my intention in its use

Q —And you say that you have never used it alone, but have always combined it with other drugs like quinin and gelsemium and drugs of that character? *A* —Except as I have used those preparations merely dissolved in water, but of course they are the combinations

Q —They are the combinations? *A* —Yes, sir

Q —Now do you know, doctor, what the recognized dose of viburnum prunifolium is, of the fluidextract of viburnum prunifolium? *A* —It would be from probably fifteen drops to a teaspoonful

Q —From 15 drops to a teaspoonful? *A* —Yes, sir, well diluted

Q —In other words, it is from 15 to 60 drops? *A* —Yes, sir, well diluted

Q —And if a teaspoonful is 60 drops it would be from 15 drops to 60 drops? *A* —Yes, sir

Q —Now, don't you know that the official dose of viburnum prunifolium, the fluidextract of virburnum prunifolium, is from 30 to 60 drops?

Mr Walker —That is objected to I don't know that there is any official dose What is the official dose? Everybody gives a different dose here We have had all kinds of doses

The Court —Find out first whether there is an official dose.

Mr T J Scofield *Q* —Is there any such thing known as an official dose? *A* —An official dose is merely the average dosage which is put on the bottle for the convenience of reference

Q —How about your pharmacopeias? Do they give any doses which are considered official? *A* —I consider that their dosage is merely a suggestion and not a rule

Q —Well, you know then what the pharmacopeia gives, do you, as the dosage? *A* —Yes, sir

Q —What is the dosage?

Mr Walker —That is objected to

A —I do not know accurately

Mr Walker —The pharmacopeia will show what it is

The Witness —What pharmacopeia do you mean?

Mr T J Scofield *Q* —Well, the United States

Mr Walker —That is objected to

The Court —The book will show

Mr T J Scofield —I suppose it will

The Witness —That is empirical

Mr T J Scofield —If she knows what an official dose is—

The Witness —It is not necessary to know the official dose You always have your reason for giving it, and your indications for how much to give

Q —How, then, do you determine what the dose will be? *A* —On the age of the patient and on the condition which you are going to relieve, whether it is an acute condition, or a chronic condition, whether you want to have an immediate effect and a tonic effect

Q —So that the question in determining the dosage, the question of the age of the patient, and the effect which you wish to obtain, cuts a figure in the dosage? *A* —Absolutely We have a rule for it

Q —And also the condition of the patient that you expect to reach by the medicine? *A* —Yes, sir

Q —So that you would not use as much with children as you would probably with adults or grown people? *A* —Naturally

Q —And with young girls you would not use so much of it as you would with married women, probably? *A* —It depends on the acuteness of the condition

Q —It depends altogether on the condition? *A* —Yes, sir

Q —So that in one condition which you might find a patient to be in, you would give a larger dose of it— *A* —Yes, sir

Q —Than you would in others? *A* —Yes, sir

Q —And that dose would range all the way from 15 drops to 60 drops? *A* —I would try to give the largest dose first, and then taper it down

Q —How about the question of the trouble being acute or chronic? Would that make any difference? *A* —Yes, sir

Q —Tell us about that, doctor? *A* —Well, in an acute case where you would want an immediate result, why you would give a much larger dose first, and then discontinue as you got your physiological action If you wanted it for a chronic condition, you would try to get an average dose which would continuously—give you a continuous effect

Q —Then, if I understand you, in the first case which you cited, or in acute cases, you would vary the dose from day to day, and time to time, in accordance with the condition? *A* —The directions would so order

Q —And you would give the largest dose first? *A* —Yes sir

Q —And then taper it down as you observed the effect of the medicine, and the condition of the patient Is that right? *A* —Yes, sir, I would lengthen the interval of the giving of it, or the amount, either one

Q —Then you would depend upon the condition of the patient—depending upon that whether or not you would lengthen the time between your doses which are given? *A* —Yes, sir

Q —And you would also change and vary the size of the dose? *A* —Yes sir

Q —Why would you do that? *A* —Because we know about, in a relative way, how much physiologically the individual will need We try to correlate our knowledge of what we are giving with what the human body can take care of

Q —Then, if I understand you right, doctor, you do not think that any medicine like viburnum prunifolium should be given in the same doses under varying conditions, without any change, to young girls and married women, and women in after life, through the menopause? *A* —If an average dose was given, it would be harmless

Q —Do you think that it would produce results? *A* —Yes, sir, it would produce the result, yes, but it would not produce harmful results because that is more or less limited

Q—Do you think that that would be good treatment doctor, as you have described what constitutes good treatment? *A*—If your patient—yes I think it would not be bad treatment, at least it is better than doing nothing

Q—In all cases? *A*—Well, I think we are just considering the average case.

Q—What do you mean by the average case? *A*—Well, the majority of cases which are symptomatic and not organic

Q—The majority that are symptomatic and not— *A*—Organic

Q—And not organic? *A*—Yes, merely functional

Q—In your experience, in your practice do you find many cases where you would want to simply give an average dose in that way running along through the sickness or would you want to treat it as you have described? *A*—In that class of cases because they are what are called ambulatory cases they merely come to the office and go back and forth and report. They are not bed cases They practically do as they please anyway

Q—Were you through doctor? *A*—Yes, sir

Q—What would you call an average dose of the fluidextract of viburnum prunifolium as you give it? *A*—Why from five to ten grains would have no deleterious effect.

Q—I am speaking of the fluidextract doctor? *A*—Oh, the fluid extract?

Q—Yes? *A*—Oh I should say the equivalent of 15 or 30 drops would be an average dose, would be one that could be continued indefinitely

Dr Lobdell stated that 15 per cent of the diseases of the pelvic organs require surgical treatment, that she gives surgical treatment if the patient needs it She never determines on operation under a month or six weeks, during which time the patient is under observation and examination She considers such an examination necessary She examines the patient from one to two or three times a week before determining the character of the treatment and this is necessary and the patient has a right to expect it The patient would not know whether or not she needed an operation Dr Lobdell stated that usually the patient knew that she had something wrong but an examination of the secretions is necessary to determine the exact difficulty Dr Lobdell stated that these germ conditions are easily communicated The witness stated that nephritis is a complication of pregnancy which she treats When a patient comes in, she determines whether the patient is pregnant She then examines the urine and the vaginal tract to see if there are any obstructions or any discharges or any malformations She considers the examination of the urine an important routine measure

Q—And in that way you determine whether there is any albuminuria there I suppose? *A*—Well that is not important.

Q—You say that is not important? *A*—No sir that is not specially important. We—we determine it and watch it but that of itself is not important

Q—What do you say? *A*—We determine it and watch it but that of itself is not important—is not specially important.

Q—Well what is albuminuria? *A*—It is merely a symptom—it is the presence of the albumin in the urine and it may be due to a number of things you know

Q—Yes Well I am not referring to the mere fact that there may be evidence of albuminuria which you say is merely a symptom but isn't the rest of it important to a woman that is pregnant? *A*—Well we have to first ascertain where it is caused It may be merely in the bladder due to the presence of pus cells in the bladder and we get a certain per cent. in that and we have to eliminate the bladder albumin That is a little different than the other Then the kidney albumin may be transitory We have to watch to see if it is peculiar to that patient Some patients have albumin just ordinarily and it does not make much difference

Q—Do you give any treatment for it when it is a kidney condition? *A*—I give them general treatment, or a special treatment a treatment based on the general condition of the patient I pay no attention to the albumin itself except by hygiene and general treatment

Q—How often do you go through that process of making an examination of the urine? *A*—Till I have determined—sometimes every day for a week—sometimes the entire quantity that is eliminated in any given 24 hours and then after that at frequent intervals till I determine—after that I just control it.

Q—Suppose your patient's feet commenced to swell and she becomes drowsy and has a good deal of headache what do you do? *A*—Diet her put her on baths and rest

Q—What is that for? *A*—Elimination through the skin

Q—You recognize the fact that the kidneys are not eliminating sufficiently do you? *A*—If she has—

Q—I say you recognize the fact— *A*—Yes sir

Q—that the kidneys are not doing their duty— *A*—Yes sir

Q—their full duty to the patient? *A*—Yes sir that they are not equal to their burden

Q—Now do they have any inflammation of the retina as a result of that condition? *A*—Oh yes.

Q—You determine that by such an examination? *A*—No sir—after an ophthalmoscopic examination.

Q—Well by some examination by some one? *A*—Yes

Q—Don't you look on that as a serious condition and a dangerous condition? *A*—Well serious, but not necessarily dangerous

Q—Do you recognize that convulsions are liable to occur? *A*—Yes, sir but if you are ready for them, they are not so dangerous as they used to be

Q—Don't you think it would be a better thing doctor to prevent them if you can do it rather than try to be ready for them if they come? *A*—Yes sir

Q—And the necessity of treatment of some kind for that condition comes by reason of your examination— *A*—Yes sir

Q—from time to time during pregnancy? *A*—Yes, sir, you are responsible for that patient's condition

Q—Now in those cases what kind of a diet do you give? *A*—Oat meal and milk—a very simple diet with eliminants and anything that will—things that would keep the skin active and keep them eliminating freely

Q—You put them on what you might call a bland diet? *A*—Yes sir—

Q—One that is not stimulating? *A*—Sometimes stimulating some times we have to have stimulating—depending on what condition arises

Q—Well it is not a stimulating diet? You do not give any stimulating diet? *A*—Well, I give champagne sometimes and things of that sort, in those cases

Q—Is it not true that as a rule, where you find patients with nephritis you rather put them on a thin milk diet? *A*—No, not necessarily

Q—Well you do it often don't you? *A*—Nothing that will deplete the strength or the tonic condition of the patient We have to be very careful to avoid that She must have enough muscle tone for her labor

Q—Doctor, don't you know or is it not true that in practically all those cases which are referable to kidney conditions which manifest themselves throughout pregnancy—kidney inflammations that you tell your patients to cut out all stimulating matters? *A*—Well albuminuria is not necessarily an inflammation of the kidney

Q—I am talking about kidney inflammations I have passed from the albuminuria *A*—I beg your pardon

Q—Don't you tell them to cut out all stimulating foods and drink?

Mr Walker—When?

The Witness—I don't recognize—in the inflammation of the kidneys that I know of they are all infections of the kidneys I know of no inflammation of the kidney not an infection

Mr T J Scofield *Q*—How is that doctor? *A*—I know of no inflammation of the kidney not an infection

Q—I say whatever you may call it, I do not care whether you call it kidney trouble coming from infection or what—under those conditions when women are pregnant don't you have them cut out all stimulating food and drinks? *A*—Why, the—unless they seem to me—if they seem to me to need anything stimulating I don't entirely depending so much on their habits you know—I have so many patients in the foreign population who are accustomed to those things, that I don't make a great difference between what they are accustomed to, and what they have enforced on them you know

Q—Well suppose they are not foreign people You say you have a great many of them and don't like to make too great a change in their diet or treatment Suppose they are not in that class Suppose they are people who have not been accustomed to the use of those things Do you tell them to cut out stimulating food and drinks or not? *A*—I prescribe the diet for them that they shall have I write out or give them definite details

Q—Won't you answer the question doctor? Do you tell them to eliminate stimulants both in food or drink, or do you not? *A*—I cut out tea and coffee and things of that sort, and put them on milk diet and on bland foods

Q—Do you tell them to go ahead and drink champagne and beer? *A*—No sir not beer but I let them have the light wines

Q—Do you know what the amount of alcohol contained in light wine is— *A*—Oh yes

Q—as compared with the alcohol contained in beer? *A*—Of course it is very much less but it is a different kind The combinations in the fruit wines are not contraindicated I think

Q—You don't mean to say—you say contraindicated'? *A*—Yes contraindicated

Mr T J Scofield *Q*—Well, is there any difference in ethyl alcohol— *A*—Oh yes

Q—Whether it is from fruit or corn? *A*—Oh yes I think there is

Q—What is the difference? *A*—Well in the fruit alcohols it would be by their own fermentation—

Q—I am asking you about ethyl alcohol? *A*—Well the ethyl alcohol I am only familiar with has—I have used it in—I know it is a very high per cent of alcohol whereas the fruit alcohols run about seven to ten or twelve per cent. even less

Q—Now don't you know doctor that all alcohol that you get from any wine or beer or in any other sort of liquors is ethyl alcohol? *A*—Probably is essentially synthetically but—

Q—What is it? *A*—It probably is essentially and synthetically but it makes a great deal of difference as to how it acts what you use it for

Q—Whether or not alcohol comes from grapes or whether it comes from corn makes a difference in its action? *A*—Yes because you only use just—you could drink quite a good deal of wine and get but very little and there would be other things with the wine that would compensate—if you took the ethyl alcohol, you would just take a little bit for a specific purpose

Q—So far as the amount of alcohol that the wine contains is concerned you get the same effect, do you not from that alcohol that you get from the same amount of alcohol in some other drink? *A*—No I think you get a better effect.

Q—Why is that? *A*—Well you would get the addition of the other ingredients with it.

Q —Doctor, I am not referring to that I am speaking of the alcohol effect, so far as the alcohol itself produces an effect, be that great or small The alcohol effect is the same from one kind of alcohol or another, is it not—ethyl alcohol? *A* —It probably would be They are exactly the same thing

Q —And I suppose the dilution, the manner in which it is conveyed to the stomach, or the dilution, the only effect is the local effect—isn't that true? *A* —That would probably be true

Q —If it is much diluted, why, it does not affect the stomach, does it, so much? *A* —It is more quickly eliminated

Q —Well, now, when the alcohol—no matter whether it is from wine or beer or whisky, or from Wine of Cardui, or how much it is diluted, when it is absorbed into the blood, the quantity being the same, the effect is the same, is it not—the alcohol effect? *A* —It is not absorbed, it is oxidized, except for about a very small per cent

Q —Where is it oxidized? *A* —Immediately it is taken into the circulation

Q —It is absorbed, is it not, before it is taken into the circulation, or it would never get there? *A* —It is not absorbed as pure alcohol

Q —Why? *A* —Because it is mixed with the fluids of the stomach, and whatever else may be in the stomach, and it is—it simply goes in as part of whatever else happens to be along with it

Q —You do not mean to say that the juices of the stomach will change the effect of alcohol, do you? *A* —Oh, no, but it mixes with it, and—

Q —Yes? *A* —Yes, and—

Q —But, so far as the alcohol is there, whatever the alcohol effect is, it is produced, is it not? *A* —No, sir, because it would have either a local or a general effect, and a local effect, if it is well diluted, would be transitory It would just go on very readily, whereas, if it is pure alcohol taken in, it would have a very irritating local effect

Q —Now, when it enters the circulation it enters as alcohol, doesn't it? *A* —Yes, sir, it enters as alcohol

Q —What becomes of it then, doctor? *A* —It becomes oxidized and eliminated through the kidneys and the skin

Q —Where is it oxidized?

A —In the circulation

Q —What does it become? *A* —It ends

Q —What is that? *A* —It simply does not—it is a neutral that has no special, specific—

Q —What is it broken up into, and what does it form? *A* —It is *not broken up into anything, it is synthetic in itself*

Q —It is? *A* —Yes, sir, as far as I know

Q —Is it not burnt up in the system? *A* —Sir?

Q —I say, is it not burnt up in the system? *A* —Oh, there is a product of combustion, yes

Q —Is that what you mean by oxidization? *A* —Yes, sir

Q —Now, what is formed by the oxidization of alcohol? *A* —Carbon

Q —What do you say? *A* —Carbon

Q —What kind? *A* —Just carbon I think that the chemical—I do not remember, but I think the chemical formula is CH—but I don't just remember

Q —When you say carbon, do you mean charcoal?

Mr Walker —I object to that

The Witness —No, that is different

Mr T J Scofield *Q* —You said carbon What is it? *A* —Energy and heat

Q —That is the result of the oxidization, is it not? *A* —Yes, sir—

Mr Walker —I object to that It is immaterial

The Witness—that is the result

THE COURT —I think you have gone far enough in this

Mr T J Scofield —Well, I want to find out about the alcohol and the way it goes

THE COURT —The witness has told you

The Witness —I am not an expert chemist

THE COURT —The witness has told you what she thought it was

To which ruling of the Court the defendants, etc , excepted

Mr T J Scofield *Q* —You say you are not an expert chemist?

The Witness —No, sir

THE COURT —You were asking her what the ash is that is left

The Witness —There is no ash

Mr T J Scofield —Let me ask just one other question which is not chemical, I think, your Honor

Q —Whatever the effect of the alcohol may be, and whatever becomes of it after it gets into the circulation, it exercises its alcoholic effect—*A* —There is practically *none left.*

Q —before it leaves the stomach, doesn't it? *A* —Yes, sir, it is a diffusible stimulant

Q —It exercises its effect before it is oxidized, doesn't it? *A* —Its immediate effect —

Q —Yes, but I say— *A* —that is on the nerves, not the—

Q —Well, it exercises its alcoholic effect before it is oxidized, doesn't it? *A* —Yes, sir, very rapidly

Mr T J Scofield —Doctor, do you agree with the statement that gonorrhea is often—or that leukorrhea is often due to gonorrhea? *A* —gonorrhea is often—or that leukorrhea is often due to gonorrhea has been treated There is a leukorrhea which remains after gonorrhea has been treated

Q —Well, now, will you kindly answer the question, doctor?

Mr Walker —I submit that that is an answer

THE COURT —It is partially answered

Mr T J Scofield *Q* —Do you agree with the statement that leukorrhea is often due to gonorrhea? *A* —Is often due?

Q —Yes, often due? *A* —Yes, I agree

Q —Well now, doctor, assuming that you have a case of leukorrhea, which is due to gonorrhea, would you recommend the use of such a medicine as Mr Walker called your attention to on your direct examination, and expect that medicine to cure the disagreeable and disgusting affliction —

Mr Walker —That is objected to

Mr T J Scofield *Q* —And restore the female organs—

Mr Walker —Objected to

Mr T J Scofield —Wait till I get through You have so often asked me to do that

Mr Walker —Pardon me, I thought you had finished

Mr T J Scofield *Q* —And restore the female organs to health?

Mr Walker —Now I object to it

THE COURT —You may ask the witness her opinion, Mr. Scofield

Mr T J Scofield *Q* —Well, what would be your opinion, doctor? *A* —Any medication would be merely part of the treatment

Q —I did not get your answer, it is difficult to hear here *A* —Any medication would be *merely part of treatment for* anything of that sort

Q —Well, I suppose, of course, you would tell her to keep her bowels open and give particular attention to diet, you would do that, wouldn't you? *A* —Yes, sir, but—

Q —You probably would tell her to take some douches, too, wouldn't you? *A* —Yes, sir, those are matters of toilet

Q —Yes, those are matters of toilet But now, can you answer the question—what do you say about that doctor—in your opinion would the use of such a medicine as Mr Walker *has called your attention* to, cure the disagreeable and disgusting affliction, and restore the female organs to health?

Mr Walker —Now, pardon me, but—

The Witness —We never use the word "cure," I think

Mr T J Scofield *Q* —I am using it now I say do you think it would cure, or wouldn't it? *A* —It would not cure— ethically we do not use the word "cure," as I understand it

Q —I am not finding fault with you about how you use it ethically. I am quoting it from a book that Mr Walker called attention to Now, I am asking you what you would say as to the word "cure" in that connection, and as a part of the question which I have propounded? *A* —As a physician I would say no

Mr Scofield then asked the witness her opinion of certain advice given in the Home Treatment Book for Women assuming that Wine of Cardui contains 48 drops of alcohol and the extractives from 30 grains of carduus benedictus and 3 grains of viburnum prunifolium Objection was made to the question on the ground that the witness had stated that she did not know anything about carduus benedictus

The question was then recast omitting the carduus benedictus and objection was made to this as it eliminated one of the contents of the medicine

Mr T J Scofield *Q* —Doctor, assume that a medicinal solution contains the extractives from 3 grains of viburnum prunifolium extracted in a 20 per cent menstruum of alcohol, and that it contains also the extractives from 30 grains of another herb or thistle, and that the characteristic of the second herb or thistle is that of a simple bitter, with some slight hepatic action I will ask you to state whether or not, in your opinion, that tablespoonful doses of that preparation, containing 48 drops of alcohol and such extractives as this question suggests, should be taken three or four times a day *on the first approach or* sign of the coming change of life and continued throughout the entire period?

Objection was made but overruled

Mr T J Scofield *Q* —What do you say, doctor, to that question? *A* —Taken as it would naturally be, while the patient was also taking food, it would have practically no deleterious—no deleterious effect. I can see that it would have no deleterious effect

Q —I am not asking that doctor I am asking you whether, in your opinion, such a medicinal solution should be given three or four times a day *on the first appearance* of the change of life, and if it should be continued throughout the entire term, as a regular routine, during the menopause?

Mr Walker —I object to it for the same reason

THE COURT —She may answer

To which ruling of the Court the plaintiff, etc , excepted

The Witness —It is so indefinite it is impossible to answer

Mr T J Scofield *Q* —Very well I will ask you then—what do you mean by "so indefinite it is impossible to answer"? *A* —In the first place, a physician cannot conceive of the beginning of the change of life as being a definite thing any more *than* the ending of a change of life would be a definite thing In fact, the women now a days don't have change of life, they don't fall into the habits of distress and invalidism that was formerly the rule

Q —That is your experience now, is it? *A* —Yes, sir, we don't even call it that any more

Q —What do you call it now? *A* —Making the turn, is the expression used

Q —Making the turn? *A* —Yes.

Q —All right Now then, doctor, I am not asking you what physicians can conceive or what they cannot conceive, but whatever they call it, I don't care anything about that I am asking you to assume certain things, then I am asking whether or not in your opinion however they may ascertain when the change of life is approaching or whatever they may call it is it your opinion as a physician and surgeon, that that solution should be given three or four times a day every day as a routine proposition, to every woman throughout the change of life, the menopause or the turn of life, as you call it? *A*—I really cannot answer that. It is too much of a question

Q—Well you can say whether you think it ought to be done or whether you think it ought not can't you? *A*—I don't think it can be given an opinion

Q—What is that? *A*—It could not be given an opinion because an opinion would be purely a personal expression

Q—Well that is what I am asking you I am asking for a purely personal expression? *A*—I don't wish to give it.

Q—You don't wish to give it? *A*—No, sir

Q—Why doctor? *A*—Because I have not any *definite idea about* it I would hear somebody else doing it and have an opinion but just to give an opinion off hand I could not do it, I haven't an imagination for it.

Q—And you are averse then to going on record one way or the other? *A*—I am averse to going on record

Q—One way or the other? Either way? *A*—At all

Q—Now doctor if you had a case of a married woman who was suffering from sterility and the sterility was due to some abnormal condition in the female pelvic tract would you advise the use of such a medicinal solution as I last described to you— *A*—That would depend on whether—

Q—Wait a minute —for it without first learning the underlying cause of the *sterility*? *A*—*If the patient came to me*, I would of course ascertain the cause

Q—What did you say? *A*—If a patient came to me I would ascertain the cause.

Q—You would first ascertain the cause? *A*—Yes I would first have to have the patient

Q—And that would be ascertained by an examination of such a character as you might conduct? *A*—Naturally

Q—Doctor do you agree that sterility is sometimes due to such wasting weakening diseases as consumption malaria diabetes and Bright's disease? *A*—*The vital organs are quite independent of the* accessory organs and therefore might not necessarily be affected

Q—Doctor I am not asking whether it would necessarily be affected I am just simply asking you—you say not necessarily that means it may Now please answer the question Do you agree with the statement that sterility is sometimes due to such wasting weakening diseases as consumption malaria Bright's disease and diabetes? *A*—It would be in a case of tuberculosis because menstruation itself stops rather early in tuberculosis and—

Q—Now how about malaria? *A*—I do not—we do not have much malaria here I have never had much malaria

Q—You have not had much experience with it? *A*—No sir

Q—How about diabetes? *A*—Well diabetes during the childbearing age is fatal to that—but if the diabetes was a complication of the pregnancy I would not know much about it—I could not tell

Q—How about hookworm? *A*—I have only seen one case of hookworm and it did not interfere with her

Q—How about Bright's disease? *A*—Well it would depend on the stage of the Bright's disease entirely

Q—Well now doctor what I am going to ask you is—I am asking *you if you think it sometimes is produced by any or all of these different conditions*?

Mr Walker—I object to it on the ground it has already been answered and explained, as to each condition

The Court—She may answer

Mr Walker—And also that it is immaterial

The Court—She may answer

To which ruling of the Court the plaintiff etc excepted

Mr T J Scofield *Q*—Well doctor assume that in the Cardui—or in Home Treatment for Women as copyrighted by the Chattanooga Medicine Company and which is sent on application to women on page 41 in the 1912 edition and in the 1913 edition assume that it is stated there that sterility is sometimes due to such wasting weakening diseases as consumption malaria diabetes and Bright's disease, have you an opinion—

Here plaintiff's counsel objected and, after some argument, were sustained

Q—Doctor under the heading of Sterility' in the Home Treatment for Women to which I called your attention a few minutes ago it is said and referring to the question of the treatment of a condition of sterility—I read as follows Women suffering from wasting weakening *diseases such as consumption, malaria* diabetes Bright's disease etc are often barren Do you agree with that statement doctor? *A*—Yes sir

Q—Will you tell the jury your opinion of the value of such a solution as I have lastly called your attention to in effecting a cure of sterility when due to any one of the four causes mentioned in the preceding question?

This question was objected to but the witness was permitted to answer

A—If it would build up the general nutrition of the patient to a point where she would *physiologically* become pregnant it would

Mr T J Scofield *Q*—Doctor just a moment Will you please answer the question first I am not asking for your reasons.

Mr Walker—She did

Mr T J Scofield—I am asking whether or not you have an opinion

The Court—Well let the answer be that she has an opinion Now, give the opinion, Doctor

The Witness—My opinion is if it built up the general nutrition of the patient so that she became physiologically naturally pregnant, it would

Mr T J Scofield—I move to strike out the answer, if the Court please

The Court—It may stand

To which ruling of the Court the defendants etc excepted

Mr T J Scofield—Have you an opinion as to whether or not that solution will do that thing whether it will build up that system in all those diseases and conditions?

Mr Walker—I object to it

The Court—She may answer

Mr Walker—What solution is he talking about, Judge?

The Court—The very one the witness had in mind when she said if it effects certain things it will be of value

The Witness—The last question, please

Mr T J Scofield *Q*—The question is do you think it would build them up if they had consumption, Bright's disease—

Mr Walker—That is not the question

Mr T J Scofield *Q*—(Continuing) —malaria or diabetes? *A*—It might and it should

Q—You think *it would*? *A*—*It should, if it is supposed to be*, what you say—

Q—What did you say? *A*—If it is a tonic it should

Q—You think it would build them up so that the consumptive effect, tubercular effect would be overcome?

Mr Walker—That is not what she said

The Witness—It has been known to do it

Mr T J Scofield *Q*—What is that? *A*—The tonics have been *known to do it*.

Q—I am talking about this medicine doctor *A*—That is, your medicine that is that which you have in the hypothetical—

Q—What was the medicine which I described? *A*—The medicine containing several ingredients in alcohol solution

Q—What were they? *A*—Just in the—I don't remember just now but I am willing to—

Q—Oh you don't remember Then I don't suppose you can answer the question Now doctor you have testified to something here at puberty and as to the use of medicines for girls? *A*—Yes sir

Q—You have said haven't you that 90 per cent of all girls who pass through the period of puberty from girlhood to womanhood, go through it with pain and suffering? *A*—Yes sir

Q—*And then you mean I suppose to say by that that 10 per cent* do not? *A*—Yes sir about 10 per cent do not.

Q—The 10 per cent go through normally and naturally? *A*—Yes sir

Q—A physiological process merely? *A*—Yes, sir

Q—And the other 90 per cent go through in sickness? *A*—Well now we don't call it sickness

Q—Very well—with pain and suffering? *A*—Yes with discomfort

Q—Now bearing in mind that it is purely a physiological process with 10 per cent of the girls who go through it without these discomforts what is your opinion as to whether every girl including the ten per cent should take the medicinal solution to which I called your attention a while ago at the time of puberty during the whole period *of puberty*? *A*—*Well the period of puberty is about as indefinite* as the period of the menopause

Q—Well whatever it is what is your notion about it if the 10 per cent that you say—with whom you say it is practically a physiological action who go through it normally, naturally, without those discomforts that the other 90 per cent have—what is your opinion as to whether such a medicine as I described to you in the question a while ago should be taken by the 10 per cent. or by any of the 10 per cent throughout all the period of puberty? *A*—I don't conceive that it would be taken by any who did not need it

Q—*Well that does not answer the question* What is your opinion as to whether it should be given to them during the whole period of pregnancy—or puberty I mean? *A*—Naturally not.

Q—You say not Now doctor, on the question of menorrhagia it is said in the Ladies Birthday Almanac of 1907 on page 23 that Flooding is always a sign of danger Do you agree with that? *A*—Yes sir

Q— The best treatment is complete rest in bed Do you believe in that? *A*—Yes sir

Q— And Wine of Cardui three times a day Assuming that Wine *of Cardui is the solution medicinal solution to which I have directed* your attention in these inquiries which I have been making do you believe that this is the best treatment in all cases of flooding regardless of the cause which produced the flooding? *A*—I am not *testifying* as to the Wine of Cardui as a medicine

Q—I am not asking that—

The Court—You may assume, Madam that the Wine of Cardui is the medicine that Mr Scofield called your attention to that you said would or would not have certain effects on certain diseases

The Witness—Any remedy of that kind might be tried at this time logically

Mr T J Scofield *Q*—Well now that is *not* what I am asking you doctor I am asking you whether or not you believe that such a solution as that is the best treatment in all cases of flooding regardless *of the cause which produces the flooding*? *A*—I don't think a physician can answer that question

Q—You don't? *A*—No sir

Q—Who else could answer it? Do you think the Chattanooga Medicine Company with its advertising counsel could answer that question?

Mr Walker—That is objected to

The Court—Objection sustained

To which ruling of the Court the defendants, etc , excepted

Mr T J Scofield Q—Do you think that a layman, one who is not a physician and experienced in the practice, could answer it?

Mr Walker—That is objected to

The Court—Objection sustained

To which ruling of the Court the defendants, etc , excepted

Mr T J Scofield Q—Do you think then, that a lady who was reading an advertisement in an almanac—

The Court—Let us not pursue that It is not a proper question

Mr T J Scofield—Very well, your Honor

To which ruling of the Court the defendants, etc , excepted

Mr T J Scofield Q—Who could answer such a question, doctor?

Mr Walker—Objected to

The Court—If she knows

Mr T J Scofield Q—If you know

A—The patient herself

Q—The patient herself? A—Yes

Q—Could she tell what the underlying cause was of her trouble?

Mr Walker—That is objected to He has been over that ground before

The Court—I think you have covered that

Mr T J Scofield—Not with this, not on the question of menorrhagia, your Honor

The Court—Very well, go ahead

Mr T J Scofield Q—The question is addressed specifically to whether or not this medicinal solution is the best treatment in all cases of menorrhagia regardless of the cause that produces the menorrhagia Do you think the patient could tell what the cause of the *menorrhagia* or flooding might be? A—She would have an idea as to the cause, from her own experience, leading up to her illness

Q—I am asking whether she could tell the cause? A—Sometimes, not definitely, but—

Q—Sometimes? A—Yes, sir

Q—In all cases? A—No, sir, all are not informed—

Q—What are the different things that produce menorrhagia or flooding, doctor? A—It may be constitutional or local

Q—Well, what are the constitutional things? A—The constitutional would be anything that depleted the character of the blood so that it did not coagulate properly or that the—well, syphilis is a frequent cause, and, of course, cancer is one of the very late causes

Q—What is the last thing you said there? A—Cancer

Q—Cancer? A—Yes, sir

Q—Now, I suppose, doctor it is true that this flooding might be produced by any one of many kinds of inflammations, might it not? A—Yes, sir

Q—It might be by endometritis, might it not? A—Yes, sir

Q—By metritis? A—Less so by metritis

Q—And by salpingitis? A—Yes, salpingitis would produce it

Q—Ovaritis? A—Yes, sir

Q—Pelvic cellulitis? A—Yes, sir

Q—Pelvic peritonitis? A—Yes, sir

Q—Inflammatory adhesions of the pelvis? A—Yes, sir

Q—Fibroids? A—Yes, sir

Q—Uterine polypi? A—Yes

Q—And ovarian tumors? A—Yes

Q—And uterine cancers? A—Yes

Q—Displacements, both anteflexion and retroflexion—and anteversion and retroflexion? A—To some extent, yes

Q—Inversion? A—Yes, sir

Q—And uterine prolapse? A—Yes, sir, in some

Q—And foreign materials that might be in the uterus? A—Yes

Q—Enlarging and thickening of the mucous lining of the membranes? A—Yes, sir

Q—And other foreign matters? A—Yes, sir

Q—Following miscarriage, for instance? A—Yes, sir

Q—might be due to a retained placenta? A—Yes

Q—It might be due to systemic disorders? A—Yes, I think

Q—Hemophilia? A—Yes

Q—Malaria? A—Yes, sir

Q—Pellagra? A—I am not familiar with pellagra

Q—Consumption? A—Yes

Q—Uterine fibrosis? A—I beg pardon?

Q—Uterine fibrosis? A—Yes, sir It is usually associated with other forms of—

Q—Arteriosclerosis of the vessels? A—Yes—well, I think that is—

Mr Walker—I don't hear you

Mr Loesch—I could not hear your answer

The Witness—So far as I know

Mr T J Scofield Q—And visceral disturbances?

Mr Loesch—What did you say about arteriosclerosis

The Witness—About that—well, that is not usually present until rather late in life, and you would not find it except in—

Mr T J Scofield Q—Even though late in life, might it be due to that? A—If it was at the menopause—

Q—Yes Now, visceral disturbances, it might be due to that, might it not— A—Yes, sir

Q—Such as heart disease, liver disease, kidney disease? A—Yes, sir

Q—Now then, how many cases of that kind do you think that such a medicinal solution as I have mentioned to you would constitute the best treatment, for the condition of flooding—without regard to which one of these causes may have produced it—any of them? A—It would not be contraindicated

Q—I am *not* asking you whether it would not be contraindicated—water would not be contraindicated, would it? I am asking you whether or not now, having gone over the whole limit or line of these things that might produce that flooding, whether it is your opinion that such a medicinal solution as I have called your attention to is the best treatment in all of these cases of flooding, regardless of the cause which produced it? A—No, sir

REDIRECT EXAMINATION BY MR WALKER

Q—Are you regular—do you practice the regular school? A—Yes, sir

Q—Now, you spoke in your direct examination about the length of time you would take in order to ascertain whether or not an operation was necessary? A—Yes, sir

Q—What is the purpose of that? A—To eliminate and exclude any other conditions than the one which I think is the cause

Q—State whether or not, doctor, in this modern day, at least in the last three or four years, there are less surgical cases than medical cases—I am not asking the proportion—but is the tendency of medicine to get away from surgery and to medicine?

Mr T J Scofield—What is that?

The Witness—Yes, sir, conservation

Mr Walker Q—What was it you said about champagne, I did not understand it You said something in answer to counsel on the other side, about champagne I did not just hear what that was A—It is one of the most desirable forms of alcohol that we have to use, where we can use it, where the people can afford it

Q—Do you distinguish between alcohol as alcohol, and alcohol with drugs? A—Yes, sir, I do

Q—What did you mean when you said about the drugs—the compensation of drugs when used with alcohol? A—It would offset any disadvantages, and they were probably improved in their usefulness

Q—Now doctor, is it a fact that women suffering from wasting weakening diseases, such as consumption, malaria, diabetes or Bright's disease, are often barren? A—Yes, sir

Q—Isn't it a fact they are often barren when they don't suffer from those diseases? A—Yes, sir, it is not uncommon

Q—Take the medicine, the hypothetical medicine that Brother Scofield gave you, if you remember anything about it, with viburnum and this other stuff that had some effect, in 20 per cent alcohol, his stuff—I don't remember what it was—and state whether or not it would hurt the other ten per cent of girls at puberty, if they took it? A—It would be negligible, in my opinion

Mr Walker—That is all

Whereupon an adjournment was taken until the same day, May 19, 1916, at 2 o'clock p m

May 19, 1916, Afternoon

TESTIMONY OF MR JOHN F BROWNELL

The court met pursuant to adjournment Mr John F Brownell was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Brownell testified that he lives in Franklin Parish, Louisiana He has known Dr A J Reynolds of Fort Necessity, La , for about six years

He has not talked with Dr Reynolds about the testimony in this lawsuit He had a conversation with Dr Reynolds in West End Butcher shop in Winsboro, in December The witness stated that Dr Reynolds told him if he knew anybody who was using Wine of Cardui in place of whisky, he could get pretty good pay if he would come over here and swear to it

The witness says he did not tell Dr Reynolds that he had been selling Wine of Cardui and had to quit it and that his wife drank it all the time Mr Brownell is now a farmer He quit merchandising in 1914 At that time he kept a store in Lydiaville about 8 miles from Fort Necessity He sold Wine of Cardui in 1912 He bought three dozen bottles in 1912 and the last bottle was sold in 1913 Later he ran a store just below Lydiaville He has not sold Cardui since 1914 The witness knows Mark B—— Mark B—— came to his store and asked for something to drink about a year and a half ago Alsip M—— was with him B——, according to the witness, took down a bottle of Blackberry and Ginger Tonic and took a swallow out of it Mr Brownell stated that there was not a bottle of Wine of Cardui in the store at that time The witness identified a carton of blackberry and ginger tonic The witness had three or four bottles of this in his store Mr Fowler read the label on the bottle

> Scott's Blackberry and Ginger Tonic 22 per cent. alcohol For Diarrhea dysentery, cramps in the bowels, colic and cholera morbis Tablespoon every three or four hours Price 75 cents a bottle

Attorneys for the defendants waived the cross-examination

May 22, 1916, Morning

TESTIMONY OF MR DANIEL COIT CAMPBELL

Mr Daniel Coit Campbell was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Daniel Coit Campbell testified that he resides in Chesterfield, six miles south of Ruby He has known Dr Robert M Newsom for two or three years

There was read to the witness the testimony of Dr Newsom to the effect that the witness drank Wine of Cardui, that his horse ran away, that he lost his right ear, that he had a concussion, that he is paralyzed on his right side and that he is under treatment now Mr Campbell stated that he never drank Wine of Cardui He had a runaway at a time when he was drinking He bought Manola The witness stated that his right ear was not cut off and exhibited it to the jury He had suffered an injury on his right side Dr Newsom treated him The witness does not even remember smelling Wine of Cardui

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that on the day of the runaway he was mighty near drunk and had been drunk about all day He drank corn whisky and Manola in the morning Manola is a medicine Chesterfield is in a dry state The witness stated that he obtained the corn whisky from J H, a mail carrier He drank some with J H He testified that he was driving went around a curve fast and was thrown out of the buggy and was unable to get up The first thing he can remember was somebody sewing his ear—sewing it back on Mr Campbell testified that the corn whisky was given to him It was yellow corn whisky, as far as he remembers

TESTIMONY OF MR W G WHITE

Mr W G White was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr White testified that he resides in Chesterfield, S C He has been in the drug business for nearly four years He knows Coit Campbell, the previous witness, and remembers the incident of the runaway Mr White testified that on that morning Mr Campbell came in and bought a bottle of Manola about an hour and a half before the accident

Mr White sells Wine of Cardui in his drug store He has known Dr Newsom for about five years, and testified that the general reputation of Dr Newsom for truth and veracity is not good and that he would not believe him under oath The witness testified Campbell had bought Manola on previous occasions but had not bought Wine of Cardui

CROSS-EXAMINATION BY MR. T J SCOFIELD

Mr White testified that there are three drug stores in Chesterfield He has been working for the Chesterfield Drug Co Previously he worked in Timmonsville, about fifty miles from Chesterfield The witness graduated from the Charleston Medical College after two years' study in pharmacy He testified that Manola is a tonic put up by the Manola Company in St Louis, and that it contains 18 per cent alcohol

Q—How long have you been selling Manola? *A*—For several years.

Q—That is a dry territory isn t it? *A*—Yes.

Q—But you sell intoxicants in violation of the law nevertheless do you? *A*—No

Q—You do not? Are you allowed to sell that stuff? *A*—Yes sir

Q—Do you sell Wine of Cardui? *A*—Yes

Q—Do all the drug stores there sell Wine of Cardui? *A*—Yes

The witness testified that on the morning of the runaway he saw Mr Campbell Mr Campbell had been drinking When Campbell bought the Manola the witness had an idea what he wanted to do with it He did not drink it in the store but took it outside The accident happened in Chesterfield about a block from the store and he went up to the scene of the accident He remained there just a few minutes and went back to the store He did not see Dr Newsom at the accident He did not look over Campbell as the crowd was so heavy around him He saw Campbell later in the day at the hotel

Q—The fact that you had sold him this Manola, if that is what you call it, and that this accident occurred, did not give you any concern at all? *A*—No I had nothing to do with his drinking it at all

Q—How is that? *A*—I had nothing to do with him drinking it at all

The witness has known Dr Newsom about five years Dr Newsom was in the senior medical class when the witness was in the senior pharmacy class Dr Newsom has a drug store of his own The drug store is in Ruby, which is about six miles from Chesterfield

The witness knows about thirty people in Ruby, which is a town of about 100 He does not know the reputation of Dr Newsom in Ruby, where he resides, but he does know his reputation in Chesterfield He stated that in Chesterfield there are three drug stores and in Ruby there is one There are also general stores in Ruby He does not recollect any general stores where they sell Wine of Cardui

Q—How many people have you heard say anything up at Chesterfield, about Dr Newsom s reputation? *A*—I do not know

Q—Well about how many? *A*—I don t know how many have said it

Q—Who did you ever hear say anything about it? *A*—I have heard the doctors in the town

Q—Who? *A*—Some of the doctors in the town

Q—What doctor? *A*—Well I don t have to say

Q—Well you do have to say I want to know who it is

The Court—Answer the question *A*—It was Perry

Mr T J Scofield—What Perry? *A*—W J Perry

The witness also heard Dr Glover of Chesterfield speak of Dr Newsom Mr White came to Chicago following a visit to Chesterfield by Miss Ervin some time ago He has been here two days He was accompanied from Chesterfield by Mr Levy, Dr Perry, Mr Coit Campbell and Mr W A Watson The witness' expenses for coming to Chicago were paid by Mr George T Levy, a lawyer from Sumter He expects to receive compensation for his services Mr Levy spoke to him about coming to Chicago

Mr T J Scofield *Q*—Who is that? When did you first talk to Levy about it? *A*—I did not talk to him till he called up over the phone

Q—That was before you left Chesterfield? *A*—Yes

Q—What did you tell the Court a while ago and this jury that nobody ever talked to you about coming up here except Miss Ervin for? That was not true, was it? *A*—He called me up to come

Q—That was not true was it? *A*—I don t know

Q—You don t know whether it was true or not? What is your reputation for truth and veracity down there?

Mr Fowler—That is objected to

The Court—Objection sustained

To which ruling of the Court the defendants e c excepted

REDIRECT EXAMINATION BY MR FOWLER

The witness stated that Dr Newsom is well known around Chesterfield Chesterfield is connected by a branch line with Ruby, and also by county roads

RECROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that he could not distinguish between a reputation for truth and a reputation for veracity, and that the reputation of Dr Newsom was bad both for truth and veracity

TESTIMONY OF MR W A WATSON

Mr W A Watson was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Watson testified that he lives in Chesterfield, S C He knows Dr Newsom and Mr J S McGregor. Mr McGregor worked in the drug store in Ruby Dr Newsom had an office near the drug store Mr Watson stated that neither Dr Newsom nor Mr McGregor had ever seen him drinking Wine of Cardui He has never taken a drink of

Wine of Cardui in his life unless it was for medicine and he did not know what it was He did not know there was any alcohol in it The first time he saw a bottle of Wine of Cardui out of the carton was about three weeks ago when he asked to look at one to see how it looked, and after he had heard Dr Newsom's testimony in the trial

The witness testified that he has never mixed any Cardui with coca cola, and that there was never any coca cola bottles in the drug store He stated he had drunk glasses of coca cola at the fountain in the drug store He stated that the first one who talked to him about coming to Chicago was a man whose name he has forgotten Later a woman talked to him about coming to testify and then another man named Mr Levy who brought him here

CROSS-EXAMINATION BY MR T J SCOFIELD

Mr Watson testified that he drinks a little sometimes and has been drunk on occasions

Q—That is a dry territory down there? *A*—Yes, sir

Q—So when you get anything to drink you have either got to get moonshine whisky or something from a drug store, haven't you? *A*—No, sir, they don't get any around there in the drug store that I know of I never got any from them I never got any liquor at any drug store there

Q—But you get Manola and stuff like that? *A*—I have bought some bitters of one kind or another around the drug stores

Q—What kind of bitters have you bought? *A*—Hostetter's?

Q—And what else? *A*—Well, I believe I bought some Peruna at another time

Q—What else? *A*—I don't know, sir

Q—Well, you bought whatever there was to sell? *A*—Whatever I could find of that, some bitters of one kind or another

Q—Different sorts of tonics and bitters? *A*—Yes, sir

Q—And you can get drunk on them all right? *A*—No, sir, I didn't particularly get drunk on that Sometimes I would buy that after I had been drinking liquor, drink a few bitters

Q—Well, you take the liquor and the bitters, and those two would do the work, wouldn't they? *A*—Well, I didn't—it didn't make me drunk I bought it just the same to help my feelings a little

Q—Do you get the moonshine whisky down there? *A*—Well, I can order—we can order whisky down there

Q—I say, do you get moonshine whisky? *A*—Moonshine whisky?

Q—Or corn whisky? *A*—Corn whisky?

Q—Yes? *A*—Yes, we get corn whisky

Q—Where do you get that? *A*—Jacksonville, Florida, or any where we order it from

Q—Is it red or white? *A*—Red or white?

Q—Yes? *A*—Either kind you order

Q—You get whatever you want? *A*—Yes, sir

Q—You can get red eye or white whisky there, is that right? *A*—Oh, yes, sir

Q—Now, the white whisky is moonshine whisky or corn whisky, isn't it? *A*—I don't know what you call moonshine whisky

Q—You said you never drank Wine of Cardui that you know of, that is right, is it? *A*—Yes, sir, I never drank none that I know of

Q—What is it? *A*—I never drank any Wine of Cardui

Q—Didn't you say a while ago you didn't ever drink any that you knew of? *A*—I said I had never drank it

Q—Is that what you said? *A*—Yes

Q—When you get full, do you know what you are drinking? *A*—Yes, I know what I am drinking

Q—All the time? *A*—Yes, sir, I know what they call it

Q—You know what they call it? *A*—I know whether it is whisky or whether it is bitters or Cardui

Q—You don't know whose bitters it may be It might be Hostetter's Bitters, or it might be Peruna? *A*—It might be Hostetter's Bitters or Peruna or whisky I know Hostetter's Bitters and Peruna and whisky apart I know the difference in them

Q—You know them as you see them, but I say, when you are drinking, when you are full, you don't pay much attention to what is on the bottle? *A*—Well, I think I know what I am drinking

Q—Well you say you generally know what you are drinking? *A*—I generally know what I am drinking

Q—Do you mean that? Is it true all the time you take a drink, do you know what it is? *A*—Well, I know something about it I claim to think I know something about what *it is, you know* I ain't no analyzer at all I could not tell exactly, but I go by the label that is on it

Q—In drinking liquors, do you get—you say you get drunk Do
you have protracted sprees? *A*—Well, I have been tight
you stay that way sometimes? *A*—I take
Q—How long would you stay that way sometimes? *A*—I take
sometimes a little nap of sleep, or something like that I have stayed
tight off and on, a day or two
Q—You read, do you? *A*—Read? No, sir, I got no learning
Very little learning, can't read much
Q—Can you read anything? *A*—I can read a little, not much
Q—Could you read what is on the label of the bottle? *A*—
Yes, sir
Q—You think you could read that, could you? *A*—Oh, yes, I
can read anything like liquid bitters, or Hostetter's or something like
that

Q—Can you read "Hostetter's Bitters" and tell it by reading it? *A*—I can see it on the bottle, and know what it is

Q—Can you pick up a bottle— *A*—No, sir, I cannot read all that is on it

Q—You cannot read it all All right Now, can you sign your name? *A*—Yes, sir, I can, not with a pen I am nervous, and I ain't got no learning I can write my name, though

TESTIMONY OF MR R T M'CREIGHT

Mr R T McCreight was called as witness for the plaintiff

DIRECT EXAMINATION BY MR FOWLER

Mr R T McCreight testified that he is in the drug business in Ruby, S C Dr Newsom is president of the drug company, and has been since 1911 Mr McCreight owns the controlling interest in the drug company He is secretary and treasurer and carries on the business He generally has one clerk

The witness does not know of selling Wine of Cardui to W A Watson He may have sold some to Loney Watson He does not recall selling any to Coit Campbell He has not sold coca cola in bottles The only purchase of Wine of Cardui which he remembers was twelve dozen bottles purchased when he first came to the drug store in 1913 The last of that twelve dozen were sold three or four days before he came to Chicago as a witness Mr McCreight is a brother-in-law of Mr McGregor

Q—I read you this, testified to by McGregor "Do you know about how much of it he sold a month? Answer Why, he would sell something like a gross He would buy it in twelve dozen bottles at a time, a gross at a time Question A gross at a time, and how long would a gross last, how soon would he sell it? Answer About 30 days as I remember" Now, is that true or not?

Mr T J Scofield—I object to the form of that question

Mr Fowler *Q*—State whether or not there was sold in this store over a gross of bottles of Wine of Cardui, within 30 days?

Mr T J Scofield—That is objected to

Mr Fowler *Q*—Or within 45 days

Mr T J Scofield—That is objected to

The Court—What is the objection?

Mr T J Scofield—If he wants to ask him how much was sold, I don't object to it

Mr Fowler—I am contradicting your witness

The Court—What is the most that you ever sold in any one month? *A*—We have not sold anything like a gross I think we average something like five or six bottles a week maybe

Dr Newsom told the witness that his testimony (Dr Newsom's) had been published in The Journal

Mr Fowler—What did he say about the testimony, as there given?

Mr T J Scofield—That is objected to, if the Court please

Mr Fowler—I will state to your honor what I desire

The Court—He may answer

To which ruling of the Court the defendants, etc, excepted

Mr Fowler *Q*—Go ahead *A*—He told me that he had read his testimony, and he did not realize that he had testified to what he had, until he read his testimony

Mr T J Scofield—Now, if the Court please, I move to strike out his answer

The Court—On what ground?

Mr T J Scofield—Because it is hearsay, and no foundation laid for it, and it is highly improper, in my judgment

The Court—Why, very frequently hearsay evidence is made use in impeachment of a witness

Mr T J Scofield—It is entirely immaterial, if the Court please

The Court—Well, the weight of it is a question for the jury He said he did not realize what he testified to—what he did

To which ruling of the Court the defendants, etc, excepted

Mr Fowler *Q*—Did he state to you in what respect he did not realize what he testified to?

Mr T J Scofield—I object to that, if the Court please, because that is hearsay, it is immaterial, and no foundation laid for it

The Court—State what the doctor said about his testimony

Mr T J Scofield—I object to the Court's question

To which ruling of the Court the defendants, etc, excepted

The Witness—Well he—sir, he told me how he was sorry that he brought the Ruby Drug Company into it—

Mr Fowler —Brought who into it? *A* —Ruby Drug Company and myself He told me that it worried him more than anything that had ever happened in his life

Mr T J Scofield —Now then, I move to strike out all that Dr Newsom is supposed to have said

The Court —Is that all he said?

The Witness —That is about all I remember

The Court —That answer may stand

To which ruling of the Court the defendants, etc., excepted

CROSS-EXAMINATION BY MR. T J SCOFIELD

Mr T J Scofield asked that everything that the witness stated that Dr Newsom is supposed to have said be stricken out on the ground that it is hearsay The Court stated that it was immaterial and ruled that it might stand

Mr McCreight stated that he did not remember selling any Wine of Cardui to Coit Campbell, but his clerk may have sold some He has sold Wine of Cardui to Loney Watson He does not know how many bottles the clerk may have sold

REDIRECT EXAMINATION BY MR. FOWLER

The witness identified a signature as the genuine signature of Dr Newsom *Mr Fowler endeavored to introduce an affidavit made by Dr Newsom since leaving Chicago after testifying for the defendant The Court ruled that this could not be introduced*

TESTIMONY OF MR SPENCER SELLERS

Mr Sellers was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR. FOWLER

Mr Spencer Sellers testified that he resides in Ruby, S C His wife's name is Louise His business is farming He knows Dr Newsom, who treated his wife about three years ago for female trouble Dr Newsom made several visits He did not operate on her Mrs Sellers has taken Wine of Cardui, the last time about eighteen months ago She has taken eight bottles, the witness stated, on the advice of Dr R M Newsom She took the Wine of Cardui according to the directions on the bottle The witness stated that Dr Newsom told him to get the Wine of Cardui and give it to his wife This Dr Newsom did in his drug store in Ruby The witness stated "she was regular and her periods were scanty" He has been married eight years He stated that his wife was apparently well when she quit taking Wine of Cardui and has been well ever since The witness has never seen his wife drink Wine of Cardui from the bottle She would take a tablespoonful three times a day

The attorneys for the defendant waived the cross-examination

TESTIMONY OF DR. W J PERRY

Dr W J Perry was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Dr W J Perry testified that he resides in Chesterfield S C He has been a practicing physician since 1905 He knows Dr R. M Newsom He considers his reputation for truth and veracity in the community where he resides as bad, and he would not believe him on oath

CROSS-EXAMINATION BY MR. T J SCOFIELD

Dr Perry stated that Dr Newsom sometimes practices in Chesterfield, but his home is in Ruby Dr Perry used to do a good deal of practice in Ruby He has known Dr Newsom four or five years Dr Perry stated that he does both emergency surgery and medicine He has been practicing medicine since 1900 He was licensed to practice in 1905 He practiced five years before he was licensed He is a graduate of the Atlanta College of Physicians and Surgeons in 1900 He could not get a license to practice medicine based on that graduation He took the state board examination in 1905

Q —But you had been practicing five years in violation of the law? A —Well it—

Q —Answer the question You either had or had not been practicing five years in violation of the law? A —Yes sir I suppose I had

Mr Fowler —Now explain doctor

The Witness —Sir?

Mr Fowler —If you have any explanation to make make it

Mr T J Scofield —Well now, I was asking him—

Mr Fowler —He started to explain a moment ago, and you stopped him

Mr T J Scofield —If there is anything else you want to say, say it

The Witness —Well, there was no objection raised—there was no objection raised from the profession

Q —Yes Nobody kicked about it? A —No, sir

Q —So you went ahead and practiced medicine in violation of the law? A —Yes, sir, I suppose you would call it violation of the law

Q —Now, do you mean to say by that that the *state officials did not catch you at it*, is that what you mean to say? A —Well, I did not try to hide it

Q —You never were prosecuted, anyway? A —No, sir, I was not prosecuted

The witness knows Dr Newsom He has met him two or three times in consultation Once he called Dr Newsom in, and once Dr Newsom called him in He cannot remember exactly when Probably some three or four years ago He has not been an associate of Dr Newsom socially or otherwise for the last year or two

Q —Are you on good terms with Dr Newsom? A —Now?

Q —Yes? A —I speak to him, yes

Q —That is not what I ask you I asked you if you were on good terms with him? *A —Well* we greet each other—speak when we pass I cannot say that I love him

Q —Do you know whether he loves you? A —I don't expect he does

Q —You don't expect he does? A —No

Q —The fact is that there is some sort of grievance between you and Dr Newsom, is there not? I am not asking what it is I am asking you if that is not the fact? A —Well, I did not think he treated me right in the case I met him on

Q —I did not ask you to tell what it was I say you are mad at *Dr Newsom are you?* A —Mad with him?

Q —Mad at him angry at him or with him? A —No, sir, I am not angry at him

Q —You are not angry with him? A —No sir

Q —You were were you not? A —At one time I was worried about some things I had heard him state, yes

The witness then gave the names of persons whom he had heard say things about the reputation of Dr Newsom for truth and veracity He mentioned Mr R. D McCreight, Mr J D McGregor, Rev A B Smith of Wexford, Dr Funderbuck of Mt Croghan, Mr Wiley Watson, Dr Vaughan at McBee, Dr Ingram at McBee, and Coit Campbell

The witness stated that he had a falling out with Dr Newsom three or four years ago and that he has heard the majority of these things since that time He stated that Dr Newsom has a very good practice, and that he does not think Dr Newsom has a larger practice than any other doctor *practicing around there The witness testified that Miss Ervin asked something about Dr Newsom The witness understands that Miss Ervin represents the Chattanooga Medicine Company He first saw Miss Ervin five or six weeks ago* Mr Levy arranged for the witness to come to Chicago

The witness is president of the Chesterfield Drug Co This drug company sells Hostetter's Bitters, Peruna, Wine of Cardui Manola and the whole line

The witness is not a member of the medical society of the State of South Carolina He stated that there are doctors in his county who are members of the state society

REDIRECT EXAMINATION BY MR FOWLER

The witness stated that a county medical society was recently organized at Cheraw He was invited to go in but did not do it He stated that he is acquainted in Patrick, S C, but he is not acquainted with the name McNab

TESTIMONY OF DR C A GLOVER

Dr C A Glover was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR. FOWLER

Dr C. A Glover testified that he resides at Chesterfield S C and he has lived there since December, 1915 He previously lived at Ashford Ala He knows a few of the people in Ruby The witness knows practically all the people in Chesterfield and has practiced some in Ruby He has been in Dr Newsom's home The witness considers the general reputation of Dr Newsom in the community for truth and veracity as bad, and he would not believe him on oath

The witness lived in Ashford from August, 1910, until November, 1915 He graduated in the Atlanta School of Medicine He is acquainted with Frank Sellers, of Cottonwood, Ala, and considers the general reputation of Frank Sellers for truth and veracity as bad and he would not believe him on oath He knows Josh Granger, but has had no dealings with him

Dr Glover has prescribed Wine of Cardui three or four times He prescribed for his wife when she was troubled with dysmenorrhea He has been married five years He prescribed Wine of Cardui for his wife about three years after he was married Previously he had given her practically everything he knows with only temporary relief He obtained equally as good results and practically better with the Wine of Cardui than any other remedies He stated that his wife has Wine of Cardui at home and still uses it occasionally She begins five or six days before the period and takes it through the period

Dr Glover also prescribed Wine of Cardui for E W, who suffered amenorrhea and scanty menstruation mostly at her periods Before using Wine of Cardui he gave her ovarian extract, hydrastis, ergot, iron tonics of various kinds, strychnin and arsenic with practically no result He testified that he began to use Wine of Cardui about January, 1915, and the patient is practically well She did not know what she was taking as he did not prescribe it in the original bottle The patient is now all right He last saw her on Wednesday previous to testifying

The witness also prescribed Wine of Cardui for Mrs F McK, who suffered with dysmenorrhea, she is a school teacher She had been married five years He began treating her after she was married, giving her viburnum and various viburnum compounds, H V C, and hydrastis He sometimes used deodorized tincture of opium and advised rest in bed during the period He obtained very little results, stating that the patient was sick for a week at each period In 1912 or 1913 he began to give Wine of Cardui, but she did not know what she was taking at the time she commenced taking it She knows it now and keeps it on hand in the original bottle While he was prescribing Wine of Cardui he also gave her cardo-septic tablets as a local application He considers the results good Since that time the patient has been able to teach school and does not lose any time She had leukorrhea before but has not leukorrhea now

The witness also prescribed Wine of Cardui to Miss M, 13 years of age, who had been suffering with amenorrhea She had never menstruated He first gave her ovarian extract, ergot, hydrastis, and Jamaica dogwood The patient would have pains in the stomach and nervous attacks, and would faint He did not secure any results with the previously mentioned remedies For four or five months he gave her Wine of Cardui and the patient is all right today "Whether Cardui did it or not, she is all right" He does not know whether or not she is still taking Wine of Cardui

The witness stated that he does not know a man by the name of Bob Cook, who ran a drug store in Ashford

CROSS-EXAMINATION BY MR T J SCOFIELD

On cross-examination the witness stated that he graduated at the Atlanta School of Medicine He took the Alabama Board and passed it He took the examination one time He did not take any other examinations elsewhere

The witness has been married about five years and has one child He testified that his wife suffered with dysmenorrhea and he does not know the cause He thinks the principal cause is endometritis She also had leukorrhea He does not know the cause of these conditions He tried to find out and made an examination with a speculum He did not use a microscope His wife has no discharge now to amount to anything The witness stated he did not think it necessary to make a microscopic examination His wife has endometritis to some extent Mrs Glover was also examined by Dr Moody of Dothan, Ala He knows that Dr Moody did not use a microscope to examine the discharge The manifestation of endometritis is a leukorrhea discharge, he believes Dr Clover stated that the leukorrheal discharge has not been bad in the last two years, but Mrs Glover still has it to some extent and also some pain He stated that the following conditions may produce endometritis gonorrheal infections, lacerations, retroflexion and retroversion, prolapsus, ovaritis and infections of the fallopian tubes

The witness examined his wife's uterus and found it in the proper position with no lacerations He was not able to find any evidence of infection in the tubes He thinks that by palpation of the ovaries and the tubes he could determine that everything was right in the tubes The ovaries are all right as far as he knows He undertook to palpate the ovaries, and so far as he knew they were normal He stated that he probably could not palpate the ovaries if they were normal, and finally, he knew the ovaries were normal because he could not palpate them He stated that if there is any active inflammation of the ovaries they may be palpated Dr Glover believes that if there is an active inflammation of the ovaries they would probably be inflamed, tender and sensitive and that they might not be palpated in every case He thinks Mrs Glover's condition was a simple endometritis The cervix of the uterus was small and he believes that the small cervix set up the endometritis from irritation He stated that very likely there would be some form of infection with it He knows that Mrs Glover did not have specific infection He has not examined the cervix for some time He last examined it about a year ago and found it larger than on the first examination He does not know what caused it to contract in the first place nor what caused it to enlarge The witness stated that a woman could have a contracted cervix after giving birth to a child He believes that she could have painful menstruation without a contracted cervix In treating his wife he used douches of normal salt solution and of cardo-septic He also used H V C and hydrastis

Q —What is H V C? *A* —H V C is some form of viburnum, in which there is a little oil of anise and cloves, and alcohol—

Q —What is that? *A* —H V —Hayden's Viburnum Compound

Q —What is Hayden's Viburnum Compound? *A* —I just mentioned it, that it has alcohol and viburnum and oil of anise, and oil of cloves, aromatic—

Q —How do you know it has? *A* —That is what it has on the bottle—I don't know

Q —What is the viburnum? *A* —Viburnum opulus

Q —Viburnum opulus? *A* —Yes, sir

Q —How much alcohol is in it, do you know? *A* —No, sir, I certainly don't

Q —It is a proprietary medicine, is it not? *A* —It is a proprietary medicine

Mr Fowler —Your Honor, I think this is going beyond cross-examination

Mr T J Scofield *Q* —In what size doses did you give it? *A* —A teaspoonful in hot water every two or three hours, according to the indications, whether you get relief or not

Q —What else did you give her? *A* —I gave her ergot, hydrastis

Q —What did you give the ergot for? *A* —For a tonic—uterine tonic

Q —What doses did you give it? *A* —About 15 drops, three times a day

Q —Ergot, fifteen drops three times a day? *A* —Yes, sir

Q —That is the medicinal dose, is it? *A* —That is the tonic dose

Q —On what theory did you give her ergot? *A* —To increase the congestion of the pelvic organs—increase the blood supply and tone it up, as a general tonic—which it is supposed to do

Q —Doesn't it do just—doesn't it have just the opposite effect, Doctor? *A* —No, sir, that is in the tonic doses—it increases it, hydrastis—

Q —On a contracted cervix what would be the effect of ergot, in—

THE COURT —Mr Scofield, this witness does not appear as an expert, you know He is testifying about facts

The Witness —I am testifying to what I know

Mr T J Scofield —I do not know whether he is or not, Your Honor, but I know he is testifying to certain things that he professes to have done

THE COURT —Yes

Mr T J Scofield —And the reason why he did it

The Witness —I can give you—

Mr T J Scofield *Q* —Now, as to the physiological action of those things that he used, I think I am entitled to an answer

The Witness —I do not know the physiological action of everything —every drug I use I use a heap of things I don't know the component parts of Wine of Cardui, for that matter I know it has done good I use anything that is good I try out—and will give it a trial—I am not a "patent medicine" man, or anything like that, but I know what I used—

Mr T J Scofield Q—I am not asking you—

Mr Fowler —Let the witness finish

Mr T J Scofield —I am not going to sit here and listen to a speech of that kind

Mr Hough —You should listen to his explanation

Mr T J Scofield —I am objecting to that sort of an answer and move that it be stricken out

Mr Hough —Finish your answer

Mr T J Scofield —I am objecting, if the Court please, to any such answer

The Court —The witness said he did not know what was in a great many drugs which he gave, but he was willing to give anything a trial—that is what I think he said

Mr T J Scofield —What I am inquiring about is the physiological action—

The Witness —I don't know I don't know the physiological action of all things

The Court —Well he says he don't know

The Witness —I am not supposed to know

Dr Glover testified that the first one he gave Wine of Cardui to was Mrs F McK He did not know what was in the Wine of Cardui He was trying to see whether it was any good Wine of Cardui was sold in the drug stores in which he was interested, but he is not interested in any drug store now He prescribed the Wine of Cardui, but not in the original bottle

An adjournment was taken until 2 o'clock the same day

May 22, 1916, Afternoon

TESTIMONY OF DR C A GLOVER (*Continued*)

Dr C A Glover resumed the stand as a witness on behalf of the plaintiff in rebuttal

FURTHER CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he is testifying concerning three patients to whom he gave Wine of Cardui In two cases they were girls with amenorrhea who were thirteen or fourteen years old He does not know how long they had been troubled with the condition before he treated them He stated that he did not know what the cause of the amenorrhea was in either of the cases He did not try to find out the cause but treated them for the symptoms He thinks the cause in one case was anemia caused by chlorosis perhaps from malaria He treated this patient with quinin, strychnin and arsenic He did not give her Wine of Cardui until he had given her these tonics He did not know whether or not the quinin did any good because he did not examine her blood

Besides the quinin he gave her Warburg's tincture He thought that she needed medicine besides that to remove the malarial element He does not think that removal of the cause allows the conditions to right themselves Dr Glover stated that he did not know the cause of the amenorrhea in the second case He gave her 2½ or 3 grain doses of ovarian extract three times a day He stated that the ovarian extract increased the secretion of the ovary He stated that there is an internal secretion of the ovary but the medical profession does not know what it is It is an internal secretion like that of the suprarenal glands Because the treatment was not doing her good he gave her Wine of Cardui—just to see what it would do The patient got better, but he would not swear that the Wine of Cardui did the work

There are 1,200 people in Chesterfield, the witness knows most of them He also knows a few people in Ruby He met Dr Newsom once since moving to Chesterfield He has no personal acquaintance with Dr Newsom and does not want to know him He gave the names of the people whom he has heard speak of Dr Newsom's reputation for truth and veracity He also gave the names of the people whom he heard speak of Frank Sellers' reputation for truth and veracity He then gave the names of the people whom he heard speak of Josh Granger's reputation for truth and veracity

The witness stated that the only ones with whom he spoke about coming to Chicago were Mr Levy and someone from Bowling Green, Ky

REDIRECT EXAMINATION BY MR. FOWLER

The witness stated that someone had corresponded with him from Bowling Green, Ky about coming to Chicago This was at the time when he lived in Ashford He answered the letter and they sent him a blank to fill out Later Dr. Moody at Cottonwood told him about the suit

The witness testified that he was giving quinin three or four months before he gave Wine of Cardui and the girl had not gotten any better in the meantime

TESTIMONY OF MR CLARENCE L GOLDSTEIN

Mr Clarence L Goldstein was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Goldstein testified that he resides in Oakdale, Tenn, and he has known Joe Cooper for ten or twelve years The witness is an engineer on the C N O & T P Railway He has been an engineer for two years and two months

The witness testified that he did not tell Joe Cooper that he drank Wine of Cardui He never tasted it that he knows about He has seen it in bottles He does not know that Wine of Cardui has alcohol in it or anything about its ingredients He stated that six or eight months ago Joe Cooper told him that there was a gentleman in Oakdale to see him about coming up as a witness

The witness testified that when Cooper came back to Oakdale after having been in Chicago he asked Mr Goldstein would he give him a statement that he had drank Wine of Cardui and did not know what it was The witness stated that no one had ever offered him any money to testify for the defendant

Mr Scofield offered the record to show that Joe Cooper had not testified that the witness had drank Wine of Cardui He had stated that Mr Goldstein had drank whisky

The Court —I think that part of it may stand I think you ought to be in a position, gentlemen, to point out in the record what you are trying to impeach the former witness on, because it ought not to be necessary for it to be all read over here You ought to know it is your witness

Mr Fowler —Your Honor, I did not know I know he testified to that particular thing

The Court —Unless you are prepared to show about Cooper offering him money I shall sustain the objection

Mr Walker —I am only talking from recollection

The Court —I will give you an opportunity to show me that if you have it there

Mr Fowler —You can cross-examine I don't remember that he was examined about it

Mr T J Scofield —There is nothing to examine on, your Honor that is all So that answer to that question—is that in or out?

The Court —It is in if the question was asked in the record and it is out if it was not

Mr Walker —Then we will examine the record and tell your Honor whether it is there or not If it is not there, it ought to be out

(Cross examination waived)

TESTIMONY OF MR W J JOHNSON

Mr W J Johnson was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr W J Johnson testified that he lives in Oakdale He has been engaged in business for 14 years and has known Joe Cooper 10 or 11 years He considers Joe Cooper's general reputation for truth and veracity as bad, and he would not believe him on oath

CROSS-EXAMINATION BY MR. T J SCOFIELD

The witness testified that Joe Cooper has been a barber for three or four years He has been working pretty steadily at this job for the last three or four years He thinks Cooper owns his shop The witness does not shave in Cooper's barber shop Joe Cooper lives on one side of the Emory River and the witness lives on the other side Joe Cooper is a married man with one child He occasionally buys goods from the witness He owes the witness some money which the witness lent him some six or seven years ago Joe Cooper is a poor man

REDIRECT EXAMINATION BY MR. FOWLER

The witness testified that he is a member of the City Council He stated that his judgment as to the reputation of

Joe Cooper is not biased by the fact that Joe Cooper owes him money

TESTIMONY OF MR T J LYNCH

Mr T J Lynch was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Lynch testified that he is a road foreman of engines for the C N O & T P R R, and resides in Oakdale, Tenn He has lived in Oakdale for nine years and has known Joe Cooper for eleven years He considers Joe Cooper's reputation bad and would not believe him on oath

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that he has had dealings with Joe Cooper He lent him a fish net once and Joe Cooper would not pay for it Joe Cooper has done some barber work for the witness Joe Cooper owes him about $6, and the witness paid him for the barber work The fish net transaction occurred three or four years ago The witness has not felt unkindly to Joe Cooper since, but he does not think he is honest He mentioned several persons who had spoken to him about Joe Cooper's reputation

REDIRECT EXAMINATION BY MR FOWLER

The witness stated that he had also heard other persons speak about Joe Cooper's reputation

RECROSS-EXAMINATION BY MR T J SCOFIELD

The witness named several others whom he heard talk about Joe Cooper Following the appearance in Oakdale of a man from the Chattanooga Medicine Co, the witness and others were talking about Joe Cooper's reputation The witness testified that he paid his own expenses to Chicago and he expects the Chattanooga Medicine Co to pay him back and to pay him a per diem

TESTIMONY OF MR H J ELLIS

Mr H J Ellis was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Ellis testified that he resides in Ashford, Ala He is a druggist and has been living there for three years He knows Josh Granger, and has known him for three weeks He considers Josh Granger's reputation for truth and veracity as bad He is not well enough acquainted with him to say that he would not believe him on oath The witness obtained his knowledge of Granger's reputation from Dr Granger, who is a distant relative of Josh Granger, and from Mr Gresham The witness did not know anything about Granger's reputation before three weeks ago

Mr Scofield moved that the evidence be stricken out The Court stated that it could stand for what it is worth—that is, the three weeks' reputation

The witness stated that he knows nothing about the reputation of Mr Sellers

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that he knows nothing about Josh Granger except what the gentlemen mentioned have said

The Court —Let me ask a question Were you investigating for yourself or did somebody come up and confide in you that this man did not tell the truth? *A* —No, sir, I was not investigating for myself

Q —How did it happen that this came up? *A* —It came up when we were reading the American Medical Journal, reading his testimony

Q —Who was reading it? *A* —Dr Granger and several other fellows, Dr Glover

Q —Where was this, in lodge meeting or in the railroad station or the general store, or where was it? *A* —It was in the drug store at home

Q —How many people were there? *A* —Why, I suppose there was three or four standing around

Q —And the information you got about this man was received at that time? *A* —Yes, sir

Q —And only from the people that were in the drug store at that time? *A* —People that actually know him I did not, only I had met him

Q —The information came from the people that were in the drug store at that time? *A* —Yes, sir

Mr T J Scofield *Q* —Was Dr Glover there? *A* —Yes, sir

Q —That is the doctor who was on the witness stand a while ago? *A* —Yes, sir

Q —Did he have The Journal there? *A* —Really I do not know, sir I don't know where The Journal came from, but it was there

Q —It was there? *A* —Yes, sir, I do not know even who it belonged to

Q —In that conversation Dr Glover took part? *A* —No, sir, he did not

Q —Well, he was there present? *A* —He was there present

Q —Dr Glover has not been living—how long did Dr Glover live in that town? *A* —Well, he lived there about three years since I came there He came there—I came there three years ago He was there then and I understand that he was there two years prior to that time

Q —He is not living there now? *A* —No, sir

Q —But he had come down there, had he, from up at Chesterfield? *A* —Yes, sir

Q —And was there that evening when this conversation was going on? *A* —Yes, sir

The witness testified that Mr E A Wheatley arranged for him to come to Chicago Mr Wheatley sent him a telegram about four days ago

TESTIMONY OF MR G M GRESHAM

Mr G M Gresham was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Gresham testified that he resides in Cottonwood, Ala, and has lived there seventeen or eighteen years He has known Frank Sellers ten or twelve years He considers Frank Sellers' general reputation for truth and veracity as bad, and he could not believe him on oath

The witness is now in the livery business He was formerly a druggist He knows Bob Cook, who kept a general store Bob Cook died in 1903 The witness testified that when he kept a drug store he sold perhaps a half gross of Wine of Cardui a year He does not know anything about the sales that Sellers' made Sellers' was a small general store

CROSS-EXAMINATION BY MR T J SCOFIELD

Mr Graham testified that he ran a drug store from 1908 until 1912 He sold Wine of Cardui during that time at $1 a bottle or six bottles for $5 Mr Sellers was with his father about five miles out in the country He used to come into town He would come in and get soda water, Manola, coca cola or Wine of Cardui or anything he wanted to get He would not sell him pure alcohol, and he does not think that he ever called for alcohol Frank Sellers is a farmer, he formerly taught school He teaches practically every winter Mr Sellers' father still operates a little store in the country Practically all general stores in that region sell Wine of Cardui

The witness testified that Frank Sellers kept a little business in Cottonwood, which ran a few months and "went bursted and smuggled the goods out" People have been talking about him since that time Afterwards the people located the stock of groceries and took them back More talk concerning his reputation for truth and veracity has occurred since this lawsuit than before The witness read about Mr Sellers' testimony in the Montgomery *Advertiser* and the Dalton *Eagle* The witness gave the name of various persons who talked about the testimony

Dr Ellis asked the witness to come to Chicago The witness expects to be paid for his expenses and to receive a per diem Mr Gresham stated that when Dr Ellis called him up he told him that he (Dr Ellis) was working for the Wine of Cardui people The witness told Dr Ellis that Mr Sellers was a crook and he had best let him alone The witness made this statement owing to the fact that Mr Sellers broke up the business and on his evidence in this suit as a witness, which was read to him from The Journal

REDIRECT EXAMINATION BY MR FOWLER

On redirect examination the witness stated that when Mr Sellers broke up he took the goods from the store and delivered them to other houses Further questions along this line were ruled out by the Court

RECROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that Mr Sellers is still employed by the school directors as a schoolteacher

TESTIMONY OF MR. H B WILLIAMS

Mr H B Williams was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR. FOWLER

Mr Williams testified that he is in the automobile business in Ashford, Ala, where he has lived for 14 years He was deputy sheriff for four years He knows Frank Sellers He considers his reputation for truth and veracity in that section as pretty bad He does not believe he would believe Mr Sellers on oath

CROSS-EXAMINATION BY MR T J SCOFIELD

Q—You say you don t believe you would? *A*—I don't believe I would no sir

Q—Why do you hesitate Mr Williams? *A*—Well, the reputation that he bears right in his community and in his home section

Q—Well I know but why do you hesitate I say about it? *A*—Well I wanted to look into it before I went to put a man s oath down

Q—What? *A*—I wanted to look into it before I put the man s oath down.

Q—Sure you wanted to know? *A*—I wanted to feel that I was right about it

TESTIMONY OF MR DOW HARRELSON

Mr Harrelson was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Harrelson testified that he resides in Charleston, S C He knows J Reed McCoy who lives in St Charles, which is about 55 or 60 miles from Charleston The witness testified that McCoy did not at any time see him drink Wine of Cardui He stated that he has never drunk Wine of Cardui Attorneys for the defendant waived the cross-examination

TESTIMONY OF MR WILLIAM MARBURY (*colored*)

Mr William Marbury was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr William Marbury testified that he resides in Sylacauga Ala He was raised in Kellyton and left there about six months ago He used to work for Mr Hester The witness was known in Kellyton as 'Button ' The witness was the only colored man in Kellyton called Button" He knows Dr Maxwell He stated that Dr Maxwell never saw him drink Wine of Cardui

The witness testified that he does not drink whisky or anything like it The attorneys for the defendant waived the cross-examination

TESTIMONY OF MRS E E GILLIAND

Mrs E E Gilliand was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR. FOWLER

Mrs E E Gilliand testified that she has lived in Kellyton for ten months Her maiden name was Sally Bailey So far as she knows she is the only Sally Bailey that married a Gilliand Her husband s name is Edward Before marriage she taught school The witness knows Dr Maxwell He did not treat her in 1912

The witness is now taking Wine of Cardui She began taking it in February or March When Dr Maxwell took care of her last December nothing was said to him about Wine of Cardui She first told Dr Maxwell that she was taking Wine of Cardui the first of the week before he came up here She has not taught school since she was married She stated that it was not mentioned between her and Dr Maxwell how much Wine of Cardui she was taking She first took three tablespoonfuls a day and after that two tablespoonfuls a day She considers that she is in better condition than when she first began to take it

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that her health is not as good as it ought to be and has not been good for some time Her health has been bad for several years She first began taking Wine of Cardui in 1911 She took about five bottles She did not take any in 1912 or 1913 that she remembers of She may have taken one or two bottles but never more than that at one time In 1916 she commenced taking it again—during the last of February—and is still taking it

DEPOSITIONS

Some depositions were then read and an adjournment was taken until Tuesday, May 23 1916

(*To be continued*)

Correspondence

The Prone Trendelenburg Position

To the Editor —In performing proctectomy following coccygectomy, with or without partial sacrectomy, the patient is placed prone in the shape of an inverted V, the buttocks at the apex This position is usually, but erroneously I believe called the reverse Trendelenburg I am writing to suggest that it be called the prone Trendelenburg, a name which more accurately describes the relation of the two positions—one supine, the other prone

Herman B Gessner, M D, New Orleans

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer s name and address but these will be omitted on request.

AROMATIC SPIRITS OF AMMONIA

To the Editor —The query of Dr W R T concerning aromatic spirits (The Journal July 1 1916 p 65) recalls to my mind an incident which happened to me a few years ago As I was returning from my vacation the train on which I was traveling through New England struck a carriage containing an elderly couple The man was not seriously injured but the woman was pulseless and in a state of profound shock They were both put in the baggage car and the train sped on its way toward the next town In the interval I gave hypodermic injections of digitalis and strychnin When we arrived at the town the local doctor who had been summoned by telegraph was there to meet us He stepped aboard the train felt the woman s pulse opened his medicine case poured out some yellowish liquid into a glass gave it to the patient who was by this time beginning to recover consciousness and stepped back saying with dramatic fervor Now you can move her with perfect safety I was eager to learn what this wonderful remedy was which could so suddenly banish the evils of shock and so I looked over his shoulder as he replaced the bottle in his medicine case It was labeled aromatic spirits of ammonia

I wish to point out that not only is the quantity of ammonium carbonate in the aromatic spirits of ammonia too small to have any stimulant action as Dr T points out but that ammonium carbonate in any dose when given by the stomach can have no appreciable effect on the circulation Being a crystalloid substance it is at once absorbed into the intestinal veins and carried directly to the liver where it is broken up into urea So many physiologists have confirmed the fact that ammonium salts are changed in the system to urea that one must regard it as a demonstrated fact If the ammonium carbonate is injected subcutaneously it is carried to the heart before it reaches the liver and hence may exercise a stimulant action on the circulatory apparatus I might also point out however that the stimulant effects of ammonium salts even when injected into the circulation are extremely fugacious lasting not more than five or ten minutes

Any stimulating effect which may be observed after the oral administration of aromatic spirits of ammonia is due either to a psychic effect or to its local irritant action on the gastric mucosa just as the irritation by ammonium carbonate in the form of smelling salts of the mucous membrane of the nose may reflexly excite the medulla If the stimulant action of ammonium carbonate administered by the mouth is due to its local irritant effect on the mucous membrane of the stomach it is evidently a matter of minor importance whether the irritant is alcoholic or ammoniacal or a combination

Horatio C Wood Jr Philadelphia

PASTEURIZATION OF MILK BY FLASH AND HOLDING METHODS

To the Editor —One of our dairymen plans to put in a pasteurizing plant to care for his milk He finds there is a difference in opinion as to the temperature and length of time of heating that is considered effective pasteurizing Before investing he wishes to be sure that he can get the best results from such a plant Can you give me this information or refer me to some authority?

Charles C Allen M D Austin, Minn

Answer — Flash pasteurization consists in heating to a temperature of from 178 F (Pennsylvania law for pasteurization of dairy by-products) to 185 F (Michigan law) Holding pasteurization employs a lower temperature for a longer period (Michigan law 145 F for thirty minutes) The holding process is usually considered safer and more desirable for the pasteurization of whole milk The U S Department of Agriculture has published a number of bulletins dealing with pasteurization, and many of them are available for free distribution

Medical Education and State Boards of Registration

Colorado April Report

Dr David A Strickler, secretary of the Colorado State Board of Medical Examiners, reports the oral, practical and written examination held at Denver, April 4, 1916 The total number of subjects examined in was 8, total number of questions asked, 80, percentage required to pass, 75 The total number of candidates examined was 7, of whom 2 passed and 5 failed, including 1 drugless practitioner Fourteen candidates were licensed through reciprocity The following colleges were represented

PASSED College	Year Grad	Per Cent
Georgetown University	(1915)	82 1
John A Creighton Medical College	(1915)	88 5
FAILED		
Northwestern Medical College, St Joseph	(1887)	*
University Medical College, Kansas City	(1893)	*†
Lincoln Medical College	(1909) 71 1, (1910)	72

LICENSED THROUGH RECIPROCITY College	Year Grad	Reciprocity with
Cooper Medical College	(1911)	California
Chicago College of Medicine and Surgery	(1915)	Wisconsin
Northwestern University	(1905)	Louisiana
College of Physicians and Surgeons, Chicago	(1910) (1912)	Illinois
Keokuk Med Coll, Coll of Phys and Surgs	(1906)	Oklahoma
State University of Iowa, College of Medicine	(1909)	Iowa
University of Maryland	(1912)	N Carolina
Barnes Medical College	(1897)	Missouri
St Louis University	(1913)	Missouri
Washington University	(1906)	Illinois
Bellevue Hospital Medical College	(1891)	Penna
Medical College of Ohio	(1897)	Ohio
Jefferson Medical College	(1913)	Penna

* No grade given
† Graduation not verified

The following questions were asked

ANATOMY

1 Discuss the composition and structure of a typical long bone 2 Describe the articulations of the femur 3 Give complete anatomic description of biceps and triceps muscles 4 Describe the course and distribution of either the bracial or middle meningeal artery 5 Describe the lateral sinus 6 Describe the axilla 7 Discuss the lymphatic system of the mammary gland 8 Describe the cerebrospinal fluid, including its habitat (that is, where it is found) 9 What do you understand by the motor area of the brain? 10 Discuss and compare inguinal and femoral hernia

PHYSIOLOGY

1 Define reflex action Illustrate 2 Describe the phenomenon of muscular contraction 3 Give a general outline of the physiology of the cerebrum, and a minute description of the location and functions of the motor area 4 How does the eye accommodate for objects at different distances? 5 Mention the properties and functions of the several blood corpuscles 6 What do you understand by blood pressure, and blood velocity? 7 Give the physiology of respiration, describing the respiratory movements and their innervation, the intrapulmonic and intrathoracic pressure, and the changes in air and blood 8 Define, classify, name and give action of enzymes 9 Name five ductless glands, mention their secretion and give the function of each 10 Give the physiology of menstruation

CHEMISTRY

1 What is dialyzed iron? 2 What are the properties of hydrocarbons? 3 How is litmus paper made, and what are its uses? 4 How does chemistry assist in diagnosing disease? Give one example and explain it in detail 5 Describe the chemistry of respiration 6 What is a chemical antidote? Name one and write the reaction 7 Give two chemical tests for carbolic acid 8 What is the composition (chemically) of normal human blood? 9 The alkalinity of the blood is due to what chemicals? 10 What is Gmelin's test (for bile pigments)?

TOXICOLOGY

1 What is a poison? 2 How may poisons be classified? Give examples in each class 3 Antidote for silver nitrate poisoning How does it act? 4 Upon what theory are eggs given in case of poisoning with corrosive sublimate? 5 What are chemical antidotes for poisoning with (a) mineral acids, (b) caustic alkalies? 6 How do chemical and physiologic antidotes differ in their action? Illustrate each 7 What are alkaloids? Give the antidote to practically all of them, explaining its action 8 Differentiate between cholera morbus and acute arsenical poisoning 9 Give usual causes and symptoms of chronic arsenical poisoning 10 What are the symptoms of phosphorus poisoning? How distinguished from acute yellow atrophy of liver?

SYMPTOMATOLOGY

1 Give the symptoms, clinical course, diagnosis and complications of acute chorea 2 Give the symptoms of paralysis agitans 3 Discuss uremia 4 Discuss the anomalies of urinary secretion 5 Discuss the anomalies of thyroid secretion 6 Discuss purpura 7 Discuss anemia 8 Discuss the affections of the myocardium 9 Discuss jaundice 10 Give the symptoms, course and complications of scarlet fever

PATHOLOGY

1 Define sarcoma, carcinoma, epithelioma, endothelioma 2 Give the pathology of gastric ulcer 3 Describe the morbid anatomy of tabes dorsalis 4 Name the animal parasites in Colorado (a) on the body, (b) in the intestine 5 Describe the tumors of the mamma 6 Describe inflammation of the uterine adnexa 7 Give the morbid anatomy associated with hemorrhage from the alimentary tract 8 Describe uterine hydatid mole 9 Describe uterine tumors 10 Describe anaphylaxis, leukocytosis, Widal test

SURGERY

1 Give the signs, symptoms and differential diagnosis of cholelithiasis 2 Describe the different forms of intestinal obstruction Give signs, symptoms and differential diagnosis 3 Give the diagnosis of hemorrhage of the middle meningeal artery 4 Describe hip joint disease 5 Describe Pott's fracture 6 Describe chronic ulcer of the leg 7 Give the differential diagnosis of injuries at the shoulder 8 Describe subphrenic abscess, giving causes, signs and symptoms 9 Name the herniae of the abdomen Describe any two 10 Define arthritis, bursitis, synovitis

OBSTETRICS

1 Describe local maternal changes at end of first half of pregnancy 2 Give your method of conduct of a normal labor 3 Describe mechanism of labor in an L O A 4 Name the positive signs of pregnancy 5 Discuss puerperal insanity 6 Diagnosis and treatment of placenta praevia at the eighth month 7 Indications and contra indications for use of forceps 8 (a) How would you control post partum hemorrhages? (b) How deliver the after coming head? 9 (a) Describe the clinical course of extra uterine pregnancy (b) Differential diagnosis of ectopic pregnancy (c) What would you carry in your O B bag? 10 (a) Describe briefly your conduct of the puerperium (b) Name the three most frequent causes of hyperemesis gravidarum

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New York January Report

Mr H H Horner, chief of the Examinations Division of the Board of Medical Examiners of the State of New York, reports the written examination held at Albany, Buffalo, New York and Syracuse, Jan 25-28, 1916 The total number of subjects examined in was 8, total number of questions asked, 80, percentage required to pass, 75 The total number of candidates examined was 146, of whom 93 passed, including 1 osteopath, and 53 failed, including 1 osteopath Four candidates were licensed through the endorsement of credentials and six were granted reregistration licenses The following colleges were represented

PASSED College	Year Grad	Total No Licensed
University of California	(1913)	1
Howard University	(1911)	1
University of Louisville	(1912)	1
College of Physicians and Surgeons, Baltimore	(1915)	2
Johns Hopkins University	(1910) (1914)	2
University of Maryland	(1910)	1
Harvard University	(1914) (1915, 2)	3
Detroit College of Medicine	(1913)	1
University of Michigan Medical School	(1913)	1
University of Michigan Homeo Med School	(1915)	1
Albany Medical College	(1913) (1914) (1915, 3)	5
Columbia University, College of Physicians and Surgeons	(1912) (1913, 2) (1914) (1915, 5)	9
Cornell University	(1914)	1
Fordham University	(1912) (1913 2) (1914, 3) (1915, 4)	10
Long Island College Hospital	(1913) (1914, 2) (1915, 5)	8
New York Homeo Med Coll and Flower Hosp	(1914, 4) (1915, 7)	11
New York Med Coll and Hosp for Women	(1915)	1
Syracuse University	(1915)	3
University and Bellevue Hospital Medical College	(1911) (1914, 2) (1915, 9)	12
University of Buffalo	(1914) (1915, 2)	3
Eclectic Medical College, Cincinnati	(1914)	1
University of Oregon	(1912)	1
Jefferson Medical College	(1912) (1915 2)	3
University of Pennsylvania	(1913) (1914)	2
Woman's Medical College of Pennsylvania	(1915)	1
Vanderbilt University	(1912)	1
Baylor University	(1905)	1
University of Vermont	(1914) (1915)	2
Medical College of Virginia	(1910)	1
University of Berlin	(1914)	1
University of Naples	(1907)	1
FAILED		
University of Alabama	(1909)	1
Chicago College of Medicine and Surgery	(1914)	1
Illinois Medical College	(1898)	1
Tulane University of Louisiana	(1913)	1
Baltimore Medical College	(1913)	1
College of Physicians and Surgeons, Baltimore	(1912)	1
Johns Hopkins University	(1910) (1911)	2
University of Maryland	(1915)	1
Harvard University	(1905) (1907) (1908)	3
Tufts College Medical School	(1904) (1905)	2
Detroit College of Medicine	(1911)	1
Albany Medical College	(1914, 4) (1915, 3)	7
Columbia Univ, Coll of Phys and Surgs	(1913) (1915)	2
Eclectic Med Coll of the City of New York	(1910)	1
Fordham University	(1913, 2) (1915)	3
Long Island College Hospital	(1912) (1915)	2
New York Homeo Med Coll and Flower Hosp	(1912) (1914, 3) (1915, 5)	9
Niagara University	(1898)	1

University and Bellevue Hospital Medical College	(1913)	1
University of Buffalo	(1911) (1914) (1915)	3
Jefferson Medical College	(1913)	1
Medico Chirurgical College of Philadelphia	(1915)	1
University of Pennsylvania	(1890) (1912)	2
Woman s Medical College of Pennsylvania	(1915)	1
McGill University	(1902)	1
University of Naples	(1905)	1
Syrian Protestant College Beirut	(1912)	1

LICENSED THROUGH RECIPROCITY

College	Year Grad	Reciprocity with
Georgetown University	(1912)	New Jersey
Eclectic Medical College Cincinnati	(1914)	Ohio
Medical College of Virginia	(1914)	Virginia
University College of Medicine Richmond	(1907)	Virginia

Book Notices

Infant Mortality By Hugh T Ashby, B A. M.D M.R.C P Visiting Physician to the Manchester Children s Hospital Cloth Price $3 25 Pp 229, with illustrations New York G P Putnam s Sons 1915

The deaths of large numbers of the male population in the nations abroad as a result of the present war has caused more attention to be given to the prevention of infant deaths The birth rates of England France and Germany have been steadily diminishing notwithstanding the fact that more and more attention is being continually given to prenatal care The author has studied the subject not only in some of the large manufacturing centers of England, but also in some of the large cities of the United States In preparing this book he has kept in mind wholly the relation of this subject to the public, and has laid less stress on medical and technical aspects Ashby considers this subject one which must be attacked chiefly from the social side. The physician can act as an instructor in pointing the way He says

> The duty of bringing up children belongs to the mothers and whatever we do we must not be too ready to relieve them of their responsibility we can however do much to see that the rights of the children are not ignored and that the mothers have the opportunity given them of learning how best to rear their children.

The author shows how closely the prevention of infant mortality is interwoven with every social subject Poverty alcoholism lack of education bad housing, are equally if not more important causes of infant mortality than imperfect hygiene The book is written in simple language

Construction Equipment and Management of a General Hospital. By Donald J Mackintosh M.V O M B LL.D Medical Superintendent of the Western Infirmary Glasgow Second Edition. Cloth Price $6 Pp 164 with illustrations Chicago Chicago Medical Book Company 1916

The thirteen chapters of this book deal, respectively, with the receiving department the medical ward the surgical ward the special ward the nursing staff for each unit medical officers outpatient department, kitchen laundry, nurses home semipermanent hospital construction and provision for nervous and mental diseases A concise statement of the essentials of a hospital are given, and forms are submitted for use in the admission and care of patients, for bed books registers monthly reports regarding utensils, linen dressings and also inventories of outfits for operating amphitheater and wards Plans are given for the admission department or receiving ward a maternity department, medical and surgical ward units outpatient department dietetic kitchen laundry and nurses home. A large insert gives a statistical study of sixty-six hospitals of Great Britain The book will be useful to those interested in the planning, construction or management of hospitals

Clinical Laboratory Technic for Nurses. By Anna L. Gibson R N Matron of the Boston City Hospital Relief Station Cloth Price $1 25 net. Pp. 194 with illustrations Boston Whitcomb & Barrows 1916

This book gives concisely and simply all the tests and laboratory technic concerning which a nurse should be informed A glossary of terms is included and also diet tables for nephritis and diabetes

Miscellany

Glycerin and Alcohol Not Detoxicants of Phenol

M I Wilbert of the Hygienic Laboratory, U S P H S, remarks (*Pub Health Rep* April 28, 1916 p 1046) that there are probably few official drugs regarding which more misleading statements have been made than phenol (carbolic acid) Various substances, fixed oils, glycerin diluted sulphuric acid the soluble sulphates of the alkalies and alkali earths, have been recommended as antidotes or prophylactics of phenol poisoning Glycerin, for instance, was early observed to lessen the caustic local action of phenol on the skin, and hence it was erroneously inferred that a mixture of phenol and glycerin would be a safe nontoxic substitute for phenol As a matter of fact glycerin will not prevent the production of gangrene or the absorption of phenol The other substances mentioned have also been found inefficient as detoxicants for phenol and in many instances distinctly harmful The value of alcohol as an antidote for phenol poisoning has been scientifically disproved by several investigators (see Clark T W and Brown, E D The Journal A M A March 17 1906 p 782, Macht *Bull Johns Hopkins Hosp* April 1915, p 98) Notwithstanding, even as late as 1915 the fallacy that ethyl alcohol is an antidote to phenol has been embodied in state laws designed to restrict the sale of phenol Wilbert reports the results of experiments made in the Hygienic Laboratory by Albert F Stevenson and Rose Parrott to determine the germicidal value of mixtures of phenol and alcohol and of phenol and glycerin, and appends an abstract of a report by Dr Liston Paine on the effect of alcohol on the toxicity of phenol It appears that in the presence of water neither alcohol nor glycerin has any detoxicating effect on phenol Ethyl alcohol, indeed, increases the solubility of phenol in water, it makes the resulting solution more antiseptic and also more toxic This agrees with the results of Macht (*Bull Johns Hopkins Hosp* April, 1915 p 98), who found that alcohol given after the ingestion of phenol actually hastened death Reliance on alcohol and glycerin to neutralize the toxic effects of phenol in short, is likely to do harm The exemption of mixtures of phenol and glycerin or phenol and alcohol from legislation restricting the sale of phenol is to be deplored It is desirable that the fallacy involved should be corrected as speedily and widely as possible

The Problem of the Chronic Alcoholic

It is generally acknowledged that society has failed in its handling of the problem of the chronic alcoholic Arrest does not cure drunkenness the habitual drunkard is unimproved by the cycle of imprisonment, release fresh debauch arrest and reimprisonment through which he passes again and again Dr V V Anderson (The Alcoholic as Seen in Court *Boston Med and Surg Jour* April 6 1916 p 492) in a study of 100 repeaters (total number of arrests for the group 1 775) emphasizes the cause of this failure, namely, disregard of the fact that the problem is medical as well as social Only 10 per cent of these alcoholics were steadily employed 49 per cent were not self-supporting when at large All of them were of course a charge on society for the expenses of their arrest, conviction and maintenance while serving their sentences That society pays a high price for the luxury of maintaining these chronic inebriates is obvious Anderson found that 56 per cent of them had a mental level below that of a child of 12, 74 per cent. were mentally subnormal and all manifested impairment of the nervous system Thirty-seven were feebleminded seven insane, seven epileptic thirty-two possessed a psychopathic constitution and the remaining seventeen showed alcoholic deterioration Fifty of Anderson s subjects were steady drinkers and fifty periodic. Of the steady drinkers only 2 per cent. were rated as of adult intelligence, and only 14 per cent had a mental level above 12 years The periodic drinkers possessed a higher level of intelligence and general capacity, but their unstable natures prevented them from making use of such faculties as they possessed Anderson concludes that the steady drinker needs prolonged medical care and custodial treatment The periodic drinker, while he does not need prolonged confinement, does require to be incorporated back into society by means of well directed medical and social service methods of treatment All, since they suffer from conditions in general regarded as medical problems, should be given the care and treatment accorded to the physically or mentally defective, rather than the ordinary penal treatment afforded them in the past

Better Reporting of Communicable Diseases

In a discussion of the prevalence of communicable diseases in New York State in 1914, F M Meader, director of the division of communicable diseases of the State Board of Health, in *Health News* says that in the group comprising scarlet fever, measles, whooping cough and typhoid fever, the least number of deaths occurred from scarlet fever, the number being 687, of which 452 were in New York City Deaths from this cause have decreased since 1908, when the number was 1,668 Whooping cough was next lowest, with 730 deaths This disease has shown a fairly uniform number of deaths since 1908 Measles comes next with a total of 839 deaths, 559 of which occurred in New York City The highest figure for this disease since 1908 was 1,284, in 1910 Typhoid fever stands highest in the group with 878 deaths, 334 of which occurred in New York City In a discussion of the question of the completeness of the reporting of these diseases, it is shown that the death rate per hundred cases in New York State was for scarlet fever, 3 1, for whooping cough, 6 3, for measles, 1 8, and for typhoid fever, 16 0 These rates compare favorably with an average for twenty states and the District of Columbia as tabulated in *Public Health Reports,* Jan 16, 1914, wherein the rates were shown to be for scarlet fever, 3 8, for measles, 1 5, and for typhoid fever, 15 1 Meader believes, however, that these rates are all too high on account of the incompleteness of reporting cases everywhere He says that intensive studies of the actual fatality rate in typhoid fever show that it is about 11 per cent, and if this rate held in New York State in 1914 it would show 2,500 cases unreported The error would be much greater for measles and whooping cough on account of the well known laxity in reporting these diseases Better compliance with the law is necessary to determine the actual status of these diseases

Lead Poisoning in House Painters

The reports of the British departmental committee, appointed to investigate the dangers of the use of lead compounds in the painting of buildings, has been published by the United States Department of Labor, as Bulletin 188 The danger to painters using lead paints was proved, the principal source of poisoning being dust This dust arises in two ways first, during the mixing of dry white lead with oil, and, second, in the dry rubbing down process The former source of danger is daily becoming less with the increasing use of ready mixed paints Dry rubbing down, however, cannot be diminished, and it seems to have been the opinion of the majority of competent witnesses that, although there would be little or no technical objection to wet rubbing down, it would be extremely difficult, if not impossible, to enforce this regulation This results from the fact that a great deal of house painting work is carried on in private houses, the invasion of which by public officers for the enforcement of regulations would be resented After considering the laws enforced in other countries, the commission recommends drastic legislation The enactment of a law prohibiting the importation, sale or use of any paint material containing more than 5 per cent of its dry weight of soluble lead compounds is the principal recommendation of the committee Certain exemptions are provided for, such as those for artists' colors In these cases, regulations insuring adequate precautions can easily be enforced To give adequate time for paint makers and others to adapt themselves to new conditions, the committee recommends that the new legislation should not come into force for at least three years Attention is drawn in the report to possible dangers from health arising from paint materials other than lead, such as turpentine or turpentine substitutes

Medicolegal

Enjoining from Practicing Without License—Chiropractic—"Harmless" Treatments

(Board of Medical Examiners vs Freenor (Utah), 154 Pac R 941)

The Supreme Court of Utah affirms a judgment for the plaintiff, enjoining the defendant, a chiropractor, from practicing medicine within the state until he obtained a license The court says that the first point sought to be made was that the alleged and found facts, if they constituted practicing medicine within the meaning of the statute, were criminal, and not invasions of property rights, and that equity would not lend its aid by injunction to restrain mere violations of public or penal statutes, except so far as it might be incidental to its enforcement of property rights or other matters of equitable cognizance But Sectioon 1737 of the Compiled Laws of Utah of 1907 provides that any person practicing medicine, surgery or obstetrics within the state contrary to law may, at the instance of the board of medical examiners, be enjoined therefrom by the district court, until he shall have been by said board lawfully admitted to practice, and, unless prevented by some constitutional provision, which was not claimed, the court thinks the legislature had the power to change, abolish or enact rules of equity, and hence it is of the opinion that the court, by reason of the statute, had jurisdiction to proceed as it did

Taking up the question of whether or not the defendant practiced medicine within the meaning of the statute, the court says that the statute is not restricted to prescribing, giving, administering or applying drugs, medicine or other agency or remedy It is broad and unrestricted, and by its language was intended to be so The defendant's statements that he did not "diagnose any disease" or "the patient," that "he had nothing to do with the diseased part," and that all he did was "to look at the spine and vertebrae—analyze the spine—to ascertain whether there was any displacement or subluxation or any other abnormal condition of the vertebrae," and "whether there was pressure or an impingement of the nerves, or an interference with vital energy or force, or a hindrance of the normal flow of life energy producing the disease," were mere evasions and confusions of what, in fact, was diagnosis to ascertain the cause of the disease or ailment So were his statements, "I don't treat the sick or ailing, I merely adjust their spine," etc It is difficult to understand how removing, or attempting to remove, the cause of an ailment is not treating, or attempting to treat, the ailment itself Whatever merits or demerits the system of chiropractic may have, it is but egotism to assert that it is *the only system* which seeks to ascertain and remove causes of disease or ailments, and on that ground to claim it distinguishable from all other systems of treatment

It was said that, if such a system as practiced by the defendant did no good, it did no harm, and that it was unlike administering powerful drugs or performing surgical operations from which ill consequences may follow unless in the hands of the skilful However, that his treatments might be harmless would be no reason to permit him to violate the law The statute does not say that one may operate on or treat an ailment of another so long as he does him no harm or shall not make him worse But this oft-repeated statement does not bear scrutiny Much harm may come to one afflicted with an ailment and seeking professional advice or aid from one incompetent to give it There are many ailments in their acute stages which, if correctly diagnosed and properly treated, yield most readily, but, if not recognized and not properly treated, become, in their chronic stages, most stubborn and unyielding It needs no argument to show the harm that may result by one without knowledge of ophthalmology attempting to treat some acute and virulent disease of the eye by attributing the cause of the disease to a subluxed vertebra of the neck causing "nerve pressure," not that the manipulation to reduce the pretended subluxation might itself do harm, but that in the meantime the disease, for want of recognition and proper attention, may have progressed to a stage where it no longer can be arrested

Insanity from Drugs as Defense to Crime—Effect of Prescription

(Perkins vs United States (U S) 228 Fed R. 408)

The United States Circuit Court of Appeals, Fourth Circuit, in reversing a conviction of manslaughter, says that the chief rules of law applicable to the case were these 1 Insanity, to be available as a defense, must reach the degree of failure to understand the difference between right and wrong 2 Drunkenness is not an excuse for crime, but the long-continued use of alcohol or other drugs, even though voluntary, may produce delirium tremens, or other mental derangement violent enough to amount to insanity, and make its victim not responsible under the law 3 Intoxication, or delirium, from a drug used with knowledge that it is likely to produce intoxication or delirium obviously stands on the same footing as intoxication from alcohol 4 A patient is not presumed to know that a physician s prescription may produce a dangerous frenzy But he is bound to take notice of the warning appearing on a prescription, and this obligation is, of course, stronger if he reads the prescription If, for example, in this case the prescription itself, or the realized effect of the first dose of the chloral, or both together, warned the defendant before he had lost control of himself that he might be thrown into an uncontrollable frenzy, then he would be guilty of murder or manslaughter according to the view the jury might take of the circumstances If, on the other hand, the defendant had good reason to infer from the terms of the prescription or the oral instructions of the physician, or from the effect of the first dose, or from all these together, that he would fall into unconsciousness from a larger dose, then he would not be legally responsible for acts committed in a violent frenzy which he had no reason to anticipate If he was so frenzied by a portion of the medicine innocently taken under the direction of the physician that he was thrown into a mental state which placed him beyond his own control and beyond the realization of what might be the ill effect of an overdose, he would not be legally responsible In this case it appeared that the defendant on a voyage from New York to Charleston, killed another passenger Before starting on the trip, he consulted a physician, who, fearing that he was on the verge of delirium tremens, prescribed phenacetin and caffein citrate for his headache, with the direction that if one powder failed to relieve, it was to be repeated in four hours, and as a sedative for his nervousness 2 ounces of chloral hydrate in solution 1 teaspoonful, containing 15 grains to be taken every six hours, to be stopped after three doses It is not correct to say as a general proposition, that a man without expert knowledge is presumed to know the effect of chloral, or of other drugs if he knows what it is, that is, what it is made of In such an instruction, however, there was no harmful error in this case because the defendant had express warning from the physician s prescription not to take more than a certain quantity He knew it was a drug that would affect the nerves and he was notified by the terms of the prescription that serious results would follow an overdose Unless the dose taken in good faith under the physician s prescription threw him into a state of uncontrollable delirium, he could not be allowed to take the risk of an overdose and visit the consequences on his fellow passengers A distinction broadly made as it was in this case between insanity produced by disease coming as an act of God and that produced by a man's own voluntary act is not sound for real mental disease amounting to insanity, as distinguished from ordinary intoxication excuses, even when brought about by voluntary dissipation or other vice. Something of the lower court s views is to be found in the report in THE JOURNAL, Sept 18, 1915 p 1053

Society Proceedings

THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Third Annual Meeting held in Washington D C, May 11 12 1916

(Concluded from page 149)

Localization of a Streptococcus in Animals from a Case of Recurring Neuritis and Myositis

DR EDWARD C ROSENOW, Rochester, Minn A streptococcus having peculiar properties was isolated from the dead pulp of the left upper first molar in the region where the attacks of pain usually began The streptococcus was also demonstrated in the sections and isolated from the infiltrated deep fascia and muscles of the left side of the neck A similar streptococcus was isolated from the pharynx and stool This streptococcus was found to have elective affinity for the pulp of teeth, dental nerves and muscles of animals It was repeatedly isolated from and demonstrated in the experimental lesions in animals whose blood was sterile, the lesions were again produced on reinjection, and the streptococcus again isolated Many animals appeared to be in pain, and one rabbit had marked pain and tenderness over the left upper jaw This affinity was proved to be absent in the diphtheroid and *Bacillus fusiformis* also isolated from the pulp of the tooth and in the streptococcus broth culture filtrate Streptococci from other sources rarely cause lesions in the pulp of teeth and dental nerves The phagocytic power of the patient s blood following the attack over the strain from the tooth was twice that of comparable normal blood These results would appear to warrant one in drawing the conclusion that the attacks of pain in the face in this patient were due to a streptococcus infection of the sheaths of the dental nerves and that the pain, swelling and tenderness and spasm of the muscles of the neck were due to myositis and fibrositis the result of infection by this streptococcus The demonstration of living streptococci in the pulp of the tooth and in the fascia and muscle during quiescent periods is significant and may explain the recurrence of the attacks The cavity in the tooth judging from the character of the filling and the bacterial flora was unable to heal for mechanical reasons This appeared to afford a culture medium for the growth of the streptococcus From stimulation of the defensive mechanism in the patient during the attacks, active growth appeared to be held in check and the symptoms disappeared in consequence only to reappear later from recurrence of active growth and localization of the streptococci when the immunity was low The improvement in the patient since the extraction of the tooth appears to be due to the removal of this focus and to prolonged artificial stimulation of the defensive mechanism by means of autogenous vaccines, which it is hoped will lead to the destruction of all the streptococci in the muscle and dental nerves, and result in the ultimate recovery of the patient

Analysis of Cases Changing to Wassermann Positive After a Wassermann Negative Period of Twelve Months or Over

DR. LOUIS A LEVISON Toledo An analysis of the results of the Wassermann tests in sixteen cases shows that a negative Wassermann even though obtained over a considerable period of time cannot be considered as a criterion of cure All the cases were late or advanced when they received competent treatment They received mercury either in small and inefficient amounts some not at all at the time when treatment could have been of value Many cases coming under my observation which have been treated intensively from the very start with salvarsan and mercurial injections have gone over one year with negative Wassermanns, and this group stands in sharp contrast to this series of late cases It may be said then that a long continued negative Wassermann period in an early case that has been treated well from the beginning is a much better criterion of cure or permanent arrest than a similar Wassermann negative period occurring in a late or advanced case

Diagnosis and Treatment of Septicemia

Dr Emil Abderhalden (Translated from the German by Dr Oscar Berghausen, Cincinnati) We have made blood cultures in fifty cases having symptoms resembling clinically septicemia Of these, 57 per cent were positive, the streptococcus being the prevailing organism Of twenty-three patients with a positive blood culture, 74 per cent died and 26 per cent recovered Of seventeen patients with a negative blood culture, 35 per cent died and 65 per cent recovered Ordinarily in this series a low white count indicated a bad prognosis The differential white count is of the greatest importance When the polymorphonuclear count approaches 90 per cent, particularly when the white count is low, the prognosis becomes grave In most of these cases the antistreptococcic serums obtainable on the market were employed, in none was a cure reported In thirteen of the cases, autogenous vaccines were employed in addition to the regular symptomatic treatment, and of this number seven recovered These patients should be given plenty of fresh air and should be fed as liberally as possible without deranging the digestion The hot pack is indicated in septicemia marked by high temperature and erythema, and in the absence of more serious complications, with stimulation before and after the pack Digitalis may be employed to enforce the heart's action in the beginning, though we cannot thereby prevent the onset of endocarditis Of the antipyretics, quinin is the most important and should be used in small doses and often Apparently good results have been obtained by hypodermoclysis The continued use of autogenous vaccines is justified Spinal puncture is indicated when symptoms of meningismus develop

Treatment of Pulmonary Tuberculosis by Tuberculin

Dr A N Sinclair, Honolulu, H I No attempt has been made by us to classify the cases, because as soon as classification is attempted, considerable opportunity for error is offered Out of 309 cases in which no tuberculin was used, 27 2 per cent of all cases treated either were arrested, or the patients were able to return to their former occupations, while out of 506 cases treated with tuberculin, 50 1 per cent of the patients were enabled to resume their former occupations Another proof of the value of tuberculin is the almost immediate and continuous improvement that has occurred in many cases in which the patients did not receive treatment at Leahi Home but who were given tuberculin treatment Failure in the use of tuberculin may rest on three factors on the tuberculin itself, on the dosage, and on the selection of unfavorable cases The dosage should be regulated, not by the "rule on the bottle method," but by the immunizing method The production of antibodies to the tubercle bacilli is accomplished more safely and just as certainly by continued small doses as by large ones I never go above 1/300 and rarely above 1/500 mg

Value of Tuberculin in the Treatment of Tuberculous Lymphnoditis

Dr George P Sanborn, Boston In lymph node tuberculosis, tuberculin is particularly indicated for its specific effect as a stimulus to the formation of antibodies which the immunizing mechanism appears to lack in this form of tuberculosis At the Boston City Hospital, all cases receive inoculations of tuberculin bacillus emulsion The initial dosage in children is from 1/50,000 to 1/25,000 mg, in adults, from 1/20,000 to 1/10,000 mg Both human and bovine tuberculin is used The increase in dosage was gradual Constitutional reactions are avoided as far as possible The patients' condition of living is practically the same during the treatment as during the period when the lymph nodes are developing In 83 per cent of the cases there was a diminution in the size of the nodes, one or more nodes broke down in 33⅓ per cent, one or more nodes developed during treatment in 20 per cent, surgical procedures were necessary in 11 per cent, there was a gain in weight in 60 per cent of the cases There has been a demonstrable improvement in at least 83⅓ per cent of the cases treated Recurrence took place in eight cases

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Diseases of Children, Chicago

July, XII, No 1, pp 1 108

1 *Reliability of Electrical Diagnosis of Tetany J B Holmes, Baltimore
2 *Electrocardiographic Studies of Congenital Heart Disease H McCulloch, Washington, D C
3 *Diphtheria in First Year of Life J D Rolleston, London
4 Metabolism Study of Case of Diabetes Insipidus J Rosenbloom and H T Price, Pittsburgh
5 *Etiology of Chorea J L Morse and C Floyd, Boston
6 Curved Lines of Suction M Kasahara, Japan

1 **Diagnosis of Tetany**—The appearance of cathodal opening contractions under 5 ma (and in the absence of certain conditions already mentioned) in children under 5 years of age Holmes claims is pathognomonic of tetany Cathodal opening contractions are, however, not infrequently absent in cases of clinical tetany The appearance of anodal opening contractions with less current than that causing anodal closing contractions, and under 5 ma during the first six months of life is probably pathognomonic of tetany in all cases, their appearance with less current than that causing anodal closing contractions and under 2 ma is probably pathognomonic up to the fourth or fifth year, thereafter it is of little significance The appearance of a Chvostek phenomenon under 2 years, in the absence of birth trauma, indicates tetany, under 4 or 5 years of age it is highly suggestive of tetany, its appearance in the highest grade (Grade 3, Escherich) is suggestive throughout childhood After 3 years the Chvostek phenomenon is not infrequently found in milder grades in apparently normal children The occurrence of any one of these symptoms in association with a clinical history of tetany is to be considered conclusive evidence of tetany The determination of the electrical values is an extremely useful, but not always an infallible, means of diagnosticating active or latent tetany in childhood It is most useful in infancy Like other clinical tests, this one has definite limitations that must be recognized

2 **Congenital Heart Disease**—Twelve cases of congenital malformation of the heart, from which electrocardiograms were obtained by McCulloch, he says, are confirmatory of the relation between right ventricular preponderance and the type of curve mentioned by Einthoven, in which there is a small R wave and a deep S wave in Lead I and a large R wave and a small S wave in Lead III They also show that this type of curve is not diagnostic of a congenital malformation, as has been supposed, and that all congenital malformations do not show this type of electrocardiogram That is, if the congenital malformation is of such a nature that a right ventricular hypertrophy results, one will obtain this type of a curve If the malformation is not associated with this secondary hypertrophy, this type of electrocardiogram fails McCulloch also studied four cases of pulmonary stenosis, five cases of defects of the interauricular or interventricular septums, two cases of patent ductus arteriosus, and one case of right ventricular atrophy

3 **Diphtheria**—This paper is based on a study of 2,600 consecutive cases of diphtheria seen by Rolleston in the course of the last twelve years Of these, only twenty patients, or less than 1 per cent, were in the first year of life Nearly twice as many occurred during the second half as during the first six months of the year Particularly remarkable is the high percentage of cases with nasal involvement Whereas of the total 2,600 only 668, or 25 6 per cent, showed any localization of diphtheria in the nose, thirteen cases, or 65 per cent, of the infants under 1 year showed nasal diphtheria either alone or in association with other diphtheritic lesions elsewhere On the other hand, the disease was by no means confined to the nose, even in some of the youngest infants, as an equal number of children showed some faucial membrane The unusual frequency of cutaneous diphtheria is also striking, namely, 15 per cent, as compared with 1 1 per cent in the total 2,600 cases In two cases the skin in the immediate neighborhood of the

mouth or nostril was affected, and in one, the labium majus and skin around the anus In only four was the larynx affected, in three of whom faucial membrane was also present One required tracheotomy and died, the other three recovered In only three out of the twenty cases could the source of infection be detected Three patients showed unmistakable signs of congenital syphilis None of the cases had immediately followed measles The incidence of paralysis among the 2,600 patients of all ages was 19 8 per cent On the other hand, bronchopneumonia, which was noted in only 1 2 per cent of the patients of all ages, occurred in six of the twenty cases, or 30 per cent, five of which terminated fatally The high mortality in the twenty cases—nine deaths, or 45 per cent—was thus mainly due to bronchopneumonia, which caused five deaths, cardiac paralysis, responsible for two deaths, and congenital syphilis for two

5 **Etiology of Chorea.**—Twenty-six children, eleven boys and fifteen girls, were studied by Morse and Floyd, their ages varying between 3 and 11 years One of the children died of chorea and several had a very severe type of the disease, but the course was mild or moderate in the remainder Lumbar puncture was done twenty times in nineteen of the cases The cerebrospinal fluid was perfectly clear in every instance. The pressure was apparently slightly increased in one instance It was normal in all the others A fibrin clot was never formed The number of cells per cubic centimeter was counted in ten cases, and was, respectively, 2, 5 7, 8 10 10 10 18, 24 and 25 There was, therefore, a slight increase in the number of cells in three of the ten cases, or 30 per cent The cells were all mononuclear in every case Lumbar puncture had no noticeable effect on the symptoms, either for better or worse, at the time or later, in any instance The investigations made by the authors show that syphilis plays no direct part in the etiology of chorea The results suggest that a micro-organism or a group of micro-organisms may be the cause of chorea They seem to show that if chorea is caused by a micro-organism, the source of infection is ordinarily in the tonsils or teeth They tend to confirm the belief that there is an intimate relation between chorea, rheumatism and endocarditis

American Journal of Orthopedic Surgery, Boston

June XIV No 6 pp 319 380

7 Subastragalar Arthrodesis in Lateral Deformities of Paralytic Feet. D P Willard Philadelphia.
8 Intraperitoneal Inoculation of Animals Its Diagnostic Value in Orthopedic Surgery M S Henderson Rochester Minn
9 Present Methods in Treatment of Infantile Paralysis. H W Orr Lincoln Neb
10 Critique of Causes and Treatment of Perthes Disease (Osteochondritis Deformans Juvenilis) F C Kidner Detroit
11 Case of Multiple Cartilaginous Exostoses H W Marshall Boston

American Journal of Roentgenology New York

June III No 6 pp 293 350

12 Roentgen Ray Idiosyncrasy G M Mackee New York
13 Physical Aspect of Roentgen Ray Measurement and Dosage. J S Shearer Ithaca
14 Value of Lateral View of Hip P M. Hickey Detroit.
15 *Cause and Prevention of Constitutional Effects Associated with Massive Doses of Deep Roentgentherapy G E Pfahler Philadelphia
16 Roentgen Observations on Duodenum with Special Reference to Lesions Beyond First Portion J T Case Battle Creek Mich
17 Case of Osteosarcoma of Head of Femur J C Hubbard and A W George Boston
18 Two Cases of Ureteral Calculus Presenting Unusual Symptoms Undiagnosed for Long Time. G E Pfahler Philadelphia.
19 Convenient Method of Marking and Mounting Dental Films A R Metz Chicago
20 Left Sided Appendicitis J T Case Battle Creek Mich
21 Warts as Source of Error in Search for Calculi J T Case Battle Creek Mich

15 Abstracted in The Journal, Nov 6, 1915 p 1670

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

June III No 12 pp 625 664

22 *Employment of Rat Poison as Measure for Preventing and Exterminating Plague T Kitano

22 **Rat Poison in Exterminating Plague.**—When the plague has appeared in different ports of Japan, rat poison has often been employed with varied success, but the manner in which this has been done in Yokohama, that is, continued distributions of large quantities of the poison to every house throughout the whole city, and especially the use of phosphorus poison, has never been tried anywhere before Kitano reports the details of this work. His conclusions are as follows The use of phosphorus in the preparation of rat poison is the most effective The effect of the arsenic rat poison, if the material be changed with the seasons and the taste of rats, is next to phosphorus rat poison Sulphonal and calcium sulphate are not perfect in their effect for rat poison If plague ridden rats eat these rat poisons they die so soon that the bacteria cannot widely spread The effect of the phosphorus rat poison lasts more than twenty days, the arsenic rat poison lasts more than that The distribution of this rat poison when compared with other preventive measures is simple and economical and it does not interfere with commercial and industrial enterprises The more widely this rat poison is distributed to every house the better are the results Kitano found no rat in the localities in which rat poisons were distributed several times to every house therein The cleansing and disinfection of the houses is quite needless after the distribution of the rat poisons As a means of preventing the plague the employment of rat poison is superior to any other measure In Yokohama the plague was entirely stamped out within six months The phosphorus used was soaked into bread and cut into pieces, containing 0 025 gm of phosphorus per piece

Boston Medical and Surgical Journal

June 29 CLXXIV No 26 pp 925 970

23 *Etiology of Diseases of Circulatory System T C Janeway Baltimore
24 Respiratory Exchange with Description of Respiration Apparatus for Clinical Use F G Benedict and E H. Tompkins Boston
25 *Diagnosis of Periosteal Sarcoma with Roentgen Ray F J Cotton Boston
26 Further Experience in Treatment of Intracranial Hemorrhage in Newborn R M Green Boston

23 **Diseases of Circulatory System.**—Janeway urges (1) the education of the public to consider 'rheumatism" a serious disease particularly in childhood and to seek competent medical advice at once and the education of the medical profession to treat even the mildest rheumatic fever in bed with large doses of salicylates from the earliest possible moment, (2) the provision of convalescent hospitals for the necessarily protracted after-care of cases of acute inflammatory disease of the heart and of patients recovering from myocardial insufficiency, (3) the development of suitable employments for cardiac patients and of the social and economic machinery necessary to placing them in such employments and (4) general hygienic measures, including the promotion of temperance

25 **Diagnosis of Periosteal Sarcoma with Roentgen Ray.**—A case of bone thickening showing in the roentgenogram a picture of slight cortical erosion only the presence of light stalactite-like threads of bone perpendicular to the bone surface strongly suggests sarcoma

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

June VIII No 12 pp 225 245

27 Dispensary Abuse and Certain Problems of Medical Practice J W Williams Baltimore

Canadian Medical Association Journal, Toronto

June VI No 6 pp 481 576

28 Ontario Medical Association H B Anderson Ontario
29 Acute Mammary Carcinoma G E Learmonth High River Alberta
30 Suppurative Otitis Media E H White Montreal.

Cleveland Medical Journal

May XV No 5 pp 315 376

31 Occupational Mortality Experience of 94 269 Industrial Workers—Metropolitan Life Insurance Company 1911 1913 L I Dublin New York
32 Some Medical and Surgical Fallacies Concerning Gastro Intestinal Derangements. N Rosewater Cleveland

Iowa State Medical Society Journal, Des Moines

June VI No 6 pp [illegible]

33 Experience in Medical Cooperation. W B Small Waterloo
34 Bacteriology of Throat Infections F J Hall Kansas City Mo

35 Health of Women Students in Some of Iowa Colleges J F Throckmorton, Chariton
36 Use of Lane's Plates in Treatment of Fractures of Femur F M Tombaugh, Burlington
37 Eczema E L McEwen, Chicago
38 Chronic Pancreatitis J W Shuman, Sioux City
39 Early Diagnosis of Cancer of Uterus G T McCauliff, Webster City

Journal of Infectious Diseases, Chicago

July, XIX, No 1, pp 1 103

40 Study of Various Methods for Determining Virulence of Diphtheria Bacilli J A Kolmer and E L Moshage, Philadelphia
41 *Study of Acid Production by Diphtheria Bacilli E L Moshage and J A Kolmer, Philadelphia
42 *Relation of Carbohydrate Splitting Ferments to Soluble Toxins of Diphtheria Bacilli J A Kolmer and E L Moshage, Philadelphia
43 Protein Sparing Action of Utilizable Carbohydrates in Cultures of Certain Sugar Fermenting Organisms H M Jones, Chicago
44 Antigenic Value of Spirochaeta Hyos in Complement Fixation Tests in Hog Cholera Serum W E King and R H Drake, Detroit
45 *Production of Antibodies After Antityphoid Inoculation K Howell, Chicago
46 *Effect of Benzene on Production of Antibodies L Hektoen, Chicago
47 *Time Relations of Infiltrating Cells in Acute Anterior Poliomyelitis A E Taft, Boston
48 *Yeasts, Probably Pathogenic in Throat Cultures A L Grover, Iowa City, Iowa
49 *Phagocytosis and Leukocytic Activity in Diphtheria Carriers R Tunnicliff, Chicago

41 **Acid Production by Diphtheria Bacilli**—In the experience of Moshage and Kolmer acid production tests are of limited value in the classification of diphtheria bacilli From the practical standpoint, these tests have generally proved successful in the identification and classification of the Hofmann bacillus on the basis that it does not produce appreciable quantities of acids with carbohydrates For the purpose of differentiating between virulent and nonvirulent bacilli, these tests have failed to prove of any value, the typical virulent diphtheria bacillus produces acids most characteristically with dextrose, dextrin, levulose, and galactose, and the false types, or Hofmann's bacilli, produce no acids at all, but between these extremes is a large group of bacilli of varying morphology and from different sources which present varying and inconstant degrees of virulence and fermentative power

42 **Carbohydrate Fermentation and Soluble Toxins**—According to Kolmer and Moshage carbohydrate fermentation by diphtheria bacilli is dependent on secretory enzymic products of the diphtheria bacillus, but is independent of the soluble poison or toxin, these ferment like carbohydrate splitting products are most likely to be produced by toxin producing bacilli

45 **Antibodies After Antityphoid Inoculation**—After injection of typhoid vaccine into human beings specific antibodies develop in the blood Howell found that they reach the highest concentration in from one to two months, after which they gradually diminish Opsonin appears to develop earliest Agglutinin, so far as known now, persists the longest, having been demonstrated to be present two years and even longer after the vaccination Specific complement fixation is obtainable with the serum of persons injected with typhoid vaccine, hence this test is not distinctive of typhoid

46 **Benzene and Production of Antibodies**—The course of infection and the production of antibodies in animals under the influence of benzene was investigated by Hektoen He found that in rabbits the repeated injection of benzene in doses of 1 c c per kilo of rabbit weight at about the same time that sheep blood is injected greatly reduces the production of specific precipitin and lysin In considerably larger doses benzene has a like effect on the production of lysin in white rats The reduction of antibody formation under these circumstances is associated with grave lesions in the marrow, with leukopenia, and other changes characteristic of benzene intoxication, the leukocytes in the rabbit being of reduced phagocytic power In the dog, benzene (0 02 c c per kilo) may cause leukocytosis associated with increase in production of lysin for goat corpuscles So far as can be determined by the precipitin method, the course of the antigen in the blood appears the same in benzenized as in nonbenzenized rabbits At the height of antibody production the injection of benzene appears to have but little effect on the leukocytes of the blood and on its antibody content, the precipitin especially persisting longer and with more fluctuation than otherwise Benzene may lower the resistance to infection by reduction (1) of antibody production, (2) of the number of leukocytes and (3) of leukocytic activity That benzene acts on elements that elaborate antibodies and that the leukocytogenic centers are concerned in this elaboration is indicated (*a*) in the rabbit, by the reduction of antibodies and of leukocytes and by the resistance to these effects when antibody production is at or near its highest activity as measured by the concentration of antibodies in the blood, and (*b*) in the dog, when suitable doses are given, by leukocytosis and increased formation of lysin.

47 **Infiltrating Cells in Poliomyelitis**—Thirty-eight cases, all in monkeys, were examined by Taft Cases with a short incubation period and brief duration before death, showed a corresponding abundance of polymorphonuclear cells in the pericellular infiltrate, and an extreme degeneration of anterior-horn nerve cells Cases in which death was delayed weeks or months showed a persistence of small round cell infiltration, but no polymorphonuclear leukocytes, even in cases with extreme nerve cell destruction Therefore, Taft concludes that the duration of the disease, the incubation period, and the cell degeneration in acute anterior poliomyelitis, apparently depend on the virulence of the infecting virus The polymorphonuclear leukocytes disappear after a time (in the cases here considered apparently within three weeks), but the small mononuclear cells, when death is sufficiently delayed, persist

48 **Yeasts in Throat Cultures**—Yeasts are found in the throats of a certain percentage of all individuals, and that under proper conditions they become pathogenic, setting up either an inflammation of the mucous membranes of the throat and air passages, or else producing a more deeply seated infection, such as a tonsillar or peritonsillar abscess Experimentally, most of these organisms appear to be pathogenic for guinea-pigs From a study of the clinical histories, Grover believes them to be pathogenic for man The cultural characteristics of the organisms recovered from throat cultures have been worked out in considerable detail but as yet no specific classification has been attempted

49 **Phagocytosis and Leukocytic Activity**—A study of diphtheria patients and carriers made by Tunnicliff showed that the phagocytic power of the blood of diphtheria carriers is increased, but at the same time the nose and throat may contain large numbers of leukocytes not engaged in phagocytosis Efforts to increase the activity of these leukocytes by the use of normal serum, leukocytic suspensions, calcium chlorid, sodium salicylate, lactic acid, and magnesium chlorid were unsuccessful, although dilute solutions of these substances are found to promote phagocytosis in the test tube.

Journal of Nervous and Mental Disease, Lancaster, Pa

June, XLIII, No 6, pp 489 590

50 *Study of Condition Occurring in Aged Usually Attributed to Cerebral Arteriosclerosis C M Byrnes, Baltimore
51 *Tumor Involving Crus Cerebri (With Unusual Endocrine Symptoms) W Timme, New York
52 Tic of Abdominal Muscles of Thirteen Years' Duration, Study of Case with Necropsy F B Clarke, Milwaukee, Wis
53 Interpretation of Symptoms in Infective Exhaustive Psychoses. S Brown II, Bloomingdale, Ill
54 *Pathologic Findings in Two Cases of Paralysis Agitans E M Auer and G P McCough, Philadelphia

50 **Study of Condition Occurring in Aged**—Although the histologic examination of the cerebral vessels of the four cases examined by Byrnes does not confirm the clinical diagnosis of cerebral arteriosclerosis, there were other important pathologic changes which Byrnes believes may explain some of the symptoms There were marked changes in the peripheral vessels, chronic interstitial nephritis, anemia, moderate local meningeal infiltration, and disintegration of the Purkinje cells, the cells of the nucleus dorsalis and the anterior horn cells of the spinal cord The author suggests that it is not improbable that the symptoms may have been due to uremic or syphilitic toxemia, extracranial arterioscle-

rosis, or spasmodic constriction of the peripheral or cerebral vessels

51 **Tumor Involving Crus Cerebri**—The status of Timme's patient (male, aged 14, in July) was as follows A staggering, swaying gait toward the left side chiefly, but also occasionally to the right, occipital headache, nausea There was a right facial weakness seen chiefly in smiling Diplopia was present Nystagmus coarse in character, greater when looking to the left, with the slow component to the right, was constant Vision $^{20}/_{30}$ each, hyperopia, with white and red fields normal Disks were pink veins slightly dilated In October a beginning papilledema with hemorrhage was first noticed in both fundi with normal color fields There was incoordination with ataxia of hands and feet, right greater than left The reflexes gave a greater right knee jerk, a double Babinski and Oppenheim greater on the right, doubtful on the left at times, abdominals, right sluggish left absent epigastrics likewise cremasterics equal Elbow jerk right exaggerated left doubtful asynergia was well marked in the usual movements of equilibration Hearing unaffected Weber and Rinne tests showed normal conduction There was irregular pointing by and adiadochokinesis of the right hand The cerebrospinal fluid was negative The penis and scrotum were unduly developed A roentgenogram of the skull showed no abnormal sella turcica nor other pathologic condition From these findings a general diagnosis of tumor was made without special localization The drowsiness and headaches became more marked He had two unilateral convulsions involving the right side Following them there was added an Oppenheim on the left side and a gradual impairment of the motor functions of the trigeminus on the left side Joint sense was unimpaired Astereognosis was absolute on the right side A moderate spasticity of the right leg began to appear but no clonus Finally there was elicited by means of the esthesiometer a slight diminution of cutaneous sensibility of the entire right side These signs together with the foregoing status enabled Timme to localize the tumor as one involving the crus and pons of the left side and extending posteriorly to the origin of, but not including the facial and auditory nerves—at any rate beyond the origin of the motor fifth

The patient became progressively worse and died of respiratory paralysis The necropsy showed a brain very much enlarged the ventricles only slightly distended with a pons very much distorted and enlarged especially on the left side This enlargement was caused by an extensive pontine tumor mass which reached forward through the left crus cerebri to the left thalamus and posteriorly nearly to the beginning of the medulla extending slightly into the brachium pontis of the left side involving in this extended focus the left median fillet the red nucleus with the emerging rubrospinal tract the left brachium conjunctivum the left motor fifth root and compressing the pyramidal tract of the left side as well as by transmitted pressure that of the right side also in lesser degree The hypophysis was normal in size The pineal gland was roughly triangular in shape with a large transverse diameter of 12 mm and its anteroposterior 10 mm This represents a gland rather large in size although within normal variation The tumor proved to be a glioma

54 **Pathologic Findings in Paralysis Agitans**—The pathologic changes noted in the region of the basal ganglia in the two cases studied by Auer and McCough were 1 Areas of rarefaction containing neuroglia cells and debris giving the tissue a moth-eaten appearance 2 Clean punched out holes possibly excessively enlarged perivascular spaces from which the vessels may have dropped out 3 Round and oval basic staining deposits chiefly in the perivascular space and adjacent tissues 4 Diminution in the number of the external medullary laminal and of the radial fibers of the lenticular nucleus with some evidence of degeneration of the latter 5 Failure of the cells of the corpus striatum to stain well which latter may possibly have been due to the age of the material 6 In one case advanced degeneration of the cells of the centrum medium on both sides and of the corpus subthalamicum

Journal-Lancet, Minneapolis

June 15 XXXVI No 12 pp 341 370

55 Case of Perforating Gastric Ulcer Following Gastro Enterostomy A N Collins Duluth

Kansas Medical Society Journal, Topeka

June XVI No 6 pp 161 190

56 History of Kansas Medical Society O D Walker Salina
57 Etiology of Iritis J W Kimberlin Kansas City Mo
58 Who Shall Practice Medicine? W H Young Fredonia.

Medical Record, New York

July 1 XC No 1 pp 1 46

59 *Congenital and Acquired Hemolytic Icterus Report of Two Cases Treated by Splenectomy G E Brewer New York
60 Human Prostate in Middle Age O S Lowsley New York
61 Frozen Limbs and Their Treatment in Present War E K Tullidge Philadelphia
62 Present Conception of Congenital Syphilis and Its Modern Diagnosis A Rostenberg New York
63 Importance of Blood Pressure to Eye Specialist F P Hoover Jacksonville Fla
64 Some Deformities of Head Mentioned in Talmud D I Macht Baltimore

59 **Congenital and Acquired Hemolytic Icterus**—Brewer reports two cases of splenomegalic hemolytic icterus greatly improved if not cured by splenectomy Both patients are free from jaundice are much improved in health, and are able to do their work without fatigue Brewer says that while there are as yet very few reports stating the remote results of splenectomy in these cases the records so far as they go show conclusively that in early splenectomy we have a comparatively safe and the only successful method yet suggested in the treatment of splenomegalic hemolytic icterus

New York Medical Journal

July 1 CIV No 1 pp 1 48

65 Conservatism in Obstetrics E B Cragin New York
66 Bone Sarcoma Treated by Radium J B Bissell New York
67 Stricture of Ureter G L Hunner Baltimore
68 Congenital Syphilis Report of Case J P Jones Nez Perce Idaho
69 Intradural Nerve Anastomosis in Selected Cases of Poliomyelitic Paralysis N Sharpe New York
70 Contents of Ovarian Cysts J T Leary H J Hartz and P B Hawk Philadelphia
71 Dementia Praecox M J Karpas New York
72 Autoserotherapy F Huber New York
73 Clinical Significance of Gastric Analysis L W Kohn Philadelphia

New York State Journal of Medicine

June XVI No 6 pp 279 330

74 Nauheim Method S Baruch New York
75 Scheme of State Control for Dependent Infants H D Chapin New York
76 Cancer as Nonsurgical Disease L D Bulkley New York
77 Relation of State to Saratoga Springs Reservation C S Whitman New York

Ophthalmic Record, Chicago

June XXI No 6 pp 271 324

78 Experimental Comparison of Three Common Methods of Measuring Heterophoria F W Weymouth San Francisco
79 Indirect Injuries of Choroid and Retina L Mills Los Angeles
80 Case of Symmetrical Lymphomata of Lacrimal and Salivary Glands (Mikulicz Disease) W C Posey Philadelphia
81 Injuries to Eye From Broken Spectacle and Eyeglass Lenses I D Vreeland Chicago
82 Additional Fixation of Eye in Connection with Use of Lid Retractors in Standard Cataract Operations D W Steverson Akron Ohio
83 Case of Choked Disk with Rapid Destruction of Sight and Subsequent Improvement A M Dunlap Shanghai China
84 Herpes of Cornea as Complication of Influenza Report of Case C W Walker York Neb

Public Health Journal, Toronto

June VII No 6 pp 289 [illegible]

85 Sewage Disposal by Activated Sludge Process T C Hatton
86 Ontario Medical Association Presidential Address H B Anderson
87 Married Woman in Industry J Martin
88 Periodic Medical Examination G Elliot Toronto
89 Antityphoid Inoculation in Soldiers G D Porter
90 School Care of Girls During Puberty R I Warner St Thomas

Southwest Journal of Medicine and Surgery, El Reno, Okla

Jun XXIV No 6 pp 161 192

91 Nervous Disorders Associated with Pelvic Disorders G H Moody San Antonio Texas.
92 Management of Pellagra and Its Treatment W T W[illegible] Navasota Texas.

93 Newer Methods for Treatment of Gonorrhea R Boland, Oklahoma City
94 Syphilis, Stomach and Pancreas A W White, Oklahoma City
95 Value of Functional Kidney Tests Prior to Operation on Urogenital Organs J Fischer, Kansas City, Mo
96 Diagnosis and Treatment of Pellagra J L Day, Norman

Surgery, Gynecology and Obstetrics, Chicago

July, XXIII, No 1, pp 1 118

97 *Technic of Splenectomy D C Balfour, Rochester, Minn
98 *Etiology of Uterine Prolapse and Cystocele G Fitzgibbon, Dublin
99 Transpancreatic Approach to Common Bile Duct A H Harrigan, New York
100 *Excision vs Gastro Enterostomy V B Knott, Sioux City, Iowa
101 *Advantage of Separate Suture of Mucous Membrane in Gastric Surgery R A Barr, Nashville, Tenn
102 *Melano Epithelioma, Report of Seventy Cases A C Broders and W C MacCarty, Rochester, Minn
103 Cases of Giant Ureteral Calculus Anomalous Development of Genito Urinary Tract I Abell, Louisville, Ky
104 Teratogenesis of Human Athoracic, Acephalic, Acardiac Triplet, with Numerous Ageneses H O White, Los Angeles, Calif
105 *Etiology of Cancer of Esophagus and Stomach W Lerche, St Paul, Minn
106 Rupture of Bladder Associated with Fracture of Pelvis, Report of One Case E P Quain, Bismarck, N D
107 Pelvic Varicocele J A Wall, Santiago, Chile
108 Purpura Hemorrhagica Following Menorrhea F R Benham, Syracuse
109 Relation of Endometrium and Ovary to Hemorrhage from Myomatous Uteri S H Geist New York
110 *Sarcoma of Scapula, Histologic Diagnosis Made by Study of Blood Aspirated from Pulsating Portion of Tumor C E Royce, Iowa City, Iowa
111 *Unilateral Hematuria Associated with Fibrosis and Multiple Microscopic Calculi of Renal Papillae R L Payne, Jr, Norfolk Va
112 Process of Repair in Wounds of Small Intestine J E McWhorter, A P Stout and C C Lieb, New York
113 Value of Determination of Cholesterol Content of Blood in Diagnosis of Cholelithiasis E Henes, Jr, New York
114 Surgical Replacement of Prolapsed Kidney D Bissell, New York
115 Method for Preventing and Controlling Hemorrhage Following Prostatectomy L H Cook Bluffton, Ind
116 Paint Brush Drainage Tube A M Miller, Danville, Ill

97 **Technic of Splenectomy**—The features emphasized by Balfour in the technic of splenectomy are (1) the abdominal exploration, (2) the dislocation of the spleen, (3) the use of a hot gauze pack, (4) the protection of stomach and pancreas from injury, (5) the preliminary ligation of adhesions and (6) the treatment of the splenic pedicle

98 **Etiology of Uterine Prolapse**—Prolapse of the uterus and cystocele, Fitzgibbon says, are due to damage of the pelvic fascia in the region of the lateral fornices and in front of the cervix Laceration of the perineum and levator ani muscles has no part in the production of prolapse The cure of the condition can be effected by reuniting the fascial diaphragm across the pelvis

100 Abstracted in The Journal, January 22, p 304

101 Abstracted in The Journal, January 15, p 215

102 **Melano-Epithelioma**—In the opinion of Broders and MacCarty the so-called "melanosarcoma" should be called properly a melano-epithelioma when such a condition arises in the skin A study made of seventy cases showed that the condition arises as a migratory hyperplasia of the basal (regenerative or germinative) layer of the skin and invades the subcutaneous tissues and distant organs as pigmented and nonpigmented oval spherical, or spindle cells, all of which cells are frequently found in the same specimen or even in the same microscopic slide The evolution of such neoplasms in regenerative cells corresponds to the evolution of cancer in the skin, mammary gland, prostatic gland and stomach The alveolar arrangement of cells in this series shows no evidence of any relation to vascular endothelium There is no specific region of the skin which seems especially predisposed to the development of melano-epitheliomas unless it is on the lower extremities, which in this series form the greatest frequency of location Nevi certainly predispose to the development of the condition Metastasis is usually to the regional lymphatic glands Melano-epitheliomas or melanosarcomas arising in the eye have a much better prognosis than melano-epitheliomas arising in the skin From a therapeutic standpoint the pathologic history of melano-epithelioma clearly points to the necessity of an early diagnosis and a radical removal of the primary lesion and regional lymphatic glands From a prophylactic standpoint pigmented areas of skin, such as warts and nevi, should be removed when these are in locations which are or have been subjected to injury

105 **Etiology of Cancer of Esophagus and Stomach**—Hot fluids so universally taken throughout the temperate climate zone, in the form of coffee, tea, soups, etc, and giving rise to chronic irritation, Lerche believes to be the main predisposing cause of cancer of the esophagus and stomach

110 **Sarcoma of Scapula**—A 10 c c of fluid had been aspirated from a tumor of the shoulder which was tentatively diagnosed as sarcoma The fluid was allowed to stand over night at room temperature The next morning it was clotted A 10 per cent formalin was added without disturbing the clot The following day Royce removed a portion of the clot and imbedded it in paraffin Sections from this block stained with hematoxylin and eosin presented beautiful pictures of islands of sarcoma cells imbedded in a matrix of fibrin and red cells The cells are of the small round variety and mitotic figures are frequently seen

111 Abstracted in The Journal, January 15, p 215

Wisconsin Medical Journal, Milwaukee

June XV, No 1, pp 525 556

117 Some Precancer Conditions W E Ground Superior
118 Bifurcation of Transverse Process of Fifth Lumbar Vertebra, Report of Case W Cunningham, Platteville
119 Syphilis of Nervous System F C Studley, Milwaukee
120 Case Involving Differential Diagnosis Between Paresis and Manic Depressive Insanity (Expansive Form) in Syphilitic Subject R Dewey, Wauwatosa
121 Health Supervision of Schoolchildren G P Barth, Milwaukee

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

June 10 I No 2895 pp 809 840

1 Malunited and Ununited Fractures R Jones
2 Spirochaeta Eurygyrata, as Found in Human Feces H B Fantham
3 *Perforating and Penetrating Wounds of Chest With Severe Hemorrhage A Don
4 Suction or Vacuum Bougie for Treatment of Chronic Gonorrhea A Cambell

3 **Perforating Wounds of Chest**—If one considers the mechanism and physics of respiration one finds that with each inspiration there is a lifting of the chest wall and depression of the diaphragm, which tends to produce a vacuum in the pleural space by a sucker-like effect A bleeding point thus has a suction pump applied to its open rent, and a clot is prevented from forming The same process of suction takes place also throughout the lung tissue, and there is added the elasticity of the lung itself which pulls apart and keeps open any rent To overcome both the suction and the elastic forces and to allow the lung a complete rest till hemorrhage has been arrested, Don proposes making a temporary opening into the pleural cavity, allowing the lung to contract quickly, and, if necessary, washing out the blood clot The risk of causing an infection which would not otherwise occur is infinitesimal Very severe hemorrhage could be treated in advanced stations of field ambulances, less severe ones more comfortably in the small hospitals of the field ambulance and others, a diminishing number in the casualty clearing stations In the only case in which Don has done the operation great relief was experienced in breathing, there was a marked diminution of pain, and, though hemorrhage could not be said to have been severe, it was still going on, and stopped quickly after the operation

The operation may be done under a general or a local anesthetic, and in any of the usual sites for empyema, preferably the mid-axillary line Percussion localizes the hemothorax, and a stab is made with a scalpel through the intercostal space, close to the lower rib The scalpel goes right into the pleural space The outer covering of one of the army tracheotomy tubes is slipped easily, owing to its central groove, one half along each side of the blade of the knife, nd is pushed right home The knife is then withdrawn and he center piece of the tracheotomy tube put in If air has not entered during the previous manipulations it will do so now, with a hissing noise and the blood will be coughed out The hemothorax may be aspirated through a soft catheter placed inside the tracheotomy tube as was done in Don's case, but this would not be necessary in cases treated earlier, when clotting would not have taken place The tube is now turned so that the inside end points up and is fixed by straps and plaster or a suture to the chest wall A pad of sterile gauze and wool completes the dressing The tube is removed after twenty-four or forty-eight hours according to the amount of blood escaping The wound closes immediately aseptically

Dublin Journal of Medical Science

June CXLI No 534 pp 371 441

5 Enzymes W G Smith
6 Myelitis With Special Reference to That Due to Trauma and New Growths E E Lavy

Edinburgh Medical Journal

June XVI No 6 pp 417 502

7 Case of Hemophilia T N Finlay and A M Drennan
8 Case of Symmetrical Pressure Fibromata D M Greig

Indian Medical Gazette, Calcutta

May LI No 5 pp 161 200

9 German Influence on Modern Bacteriology—Need for Elimination and Revision W C Hossack
10 Correct Names of Helminths of Man C Lane
11 Treatment of Kala Azar With Special Reference to Use of Antimony and Formaldehyd R L N B Bahadur
12 Injuries to Peripheral Nerves F P Connor
13 Septic Wounds Affecting English and Indian Troops Comparison N W Mackworth
14 Gunshot Wound of Foot A B de Castro

Medical Journal of Australia, Sydney

May 20 I No 21 pp 411 428

15 Formaldehyd in Ether E H Embley
16 Oil Ether Anesthesia L. Lambert and M R Hughes

May 27 II No 22 pp 429 446

17 Inflammation of Fallopian Tubes W T Chenhall
18 Case of Liver Abscess D A Cameron
19 Epidermolysis Bullosa N Paul

Practitioner, London

June XCVI No 6 pp 575 664

20 *Vaccine Treatment of Asthma in Bengal L Rogers
21 *Alternatives to Operation of Colotomy J S McArdle.
22 Citrated Milk Feeding for Infants F J Poynton
23 Recent Progress in Gynecology F McCann
24 Recent Work on Diseases of Heart C W Chapman
25 Tuberculosis Arrangements From Clinical Point of View H Vallow
26 Diet in Treatment of Pulmonary Tuberculosis D C Muthu
27 Vicious Circles Associated With Disorders of Blood J B Hurry
28 Treatment of Scars W K Sibley
29 Transplantation of Flexor Carpi Radialis Into Extensors of Thumb and Fingers in Case of Musculospiral Paralysis P J Byrne
30 Case of Migratory Pneumonia Occurring in Lung Wounded by and Containing Shrapnel Bullet S H Bennett

20 **Vaccine Treatment of Asthma**—Promising results have been obtained by Rogers in a number of cases of asthma by vaccine treatment Cultures were made from freshly obtained sputum subcultures were made from the fine pneumococcal and streptococcal-like colonies a number of them being taken up so as to get as many strains as possible in the tubes used for making the vaccine Occasionally the culture consisted so purely of fine colonies that the vaccine could be prepared from the primary culture but this was exceptional A solution of 5 c c of sterile salt were added to each tube which were then heated to from 56 to 60 C for one hour, one half per cent of phenol was added and after mixing well the fluid was put up in doses of ½ and 1 c c The first dose was ½ c c which usually contained somewhere about 50 000 000 organisms If no febrile but only a little local reaction occurred a dose of 1 c c was given after five days and repeated weekly Occasionally the dose was increased to 1½ or 2 c.c. but as a rule this was unnecessary

21 **Colotomy Operation Alternatives**—When there is a cancerous obstruction in the bowel at the edge of the true pelvis, with infiltration of the surrounding tissues, and resection is quite impossible colotomy, with all its inconveniences, is the usual procedure now carried out In McArdle's opinion instead of colotomy, either of four operations should be carried out according to the conditions found on exploration 1 The sigmoid above the stricture can be joined to the sound lower part of the rectum if the former is free enough 2 If the sigmoid is fixed so that it cannot be brought down the transverse colon, if low may be anastomosed to the rectum and to the descending colon above the stricture 3 When this is not feasible the cecum may be joined to the rectum and the ileum joined to the colon above the stricture 4 The lowermost coil of the ileum may be joined to the rectum and by a lateral anastomosis to the descending colon above the obstruction

Bulletin de l'Académie de Médecine, Paris

May 30 LXXV No 22 pp 647 670

31 *Syphilis Not a Factor in Appendicitis (Sur l intestin des heredo syphilitiques) Jalaguier Routier and others
32 Bacteriologic and Clinical Study of Infectious Sore Throat and Treatment of Different Types (Angines Serotherapie de la d phtherie) Capitan
33 Indications for Resection of the Knee for Suppurating War Wounds (Les indications de la resection du genou dans les arthrites suppurees par plaies de guerre) L Berard
34 *Duration of Immunity Conferred by Preventive Antitetanus Serum (Duree de l immunite conferee par les injections preventives de serum antitetanique) L Berard and A Lumiere
35 Arteriovenous Aneurysms (Sur les anevrismes traumatiques arterio veineux directs) Soubbotitch

31 **Syphilis Not a Factor in Appendicitis**—Jalaguier, Routier and Monod declare that they have never found any changes suggesting syphilis as a pathogenic factor here and they denounce Gaucher s statements that inherited or acquired syphilis is frequently at the basis of enterocolitis and appendicitis especially in infants and older children (See also Paris Letter in THE JOURNAL July 8, 1916 p 132)

34 **Duration of Protection from Antitetanus Serum**—Berard and Lumiere know of over twenty cases of tetanus developing in wounded requiring some late operation, after the protection afforded by the prophylactic serotherapy had subsided Roux s experiences with animals indicate that the protection begins to decline the fifteenth day and is quite gone by the fortieth or fiftieth day In man twenty or thirty days is regarded as the limit after two injections of 10 c c each In four cases described in detail the tetanus developed after an operation to extract a fragment of shell only seven or eight days after the wound and prophylactic injection Hence they plead for repeating the prophylactic injection between the fifth and eighth days whenever the wound was unusually soiled or an operation is contemplated

Paris Médical

June 10 VI No 24 pp 549 564

36 *Mixed Diseases (Les maladies mixtes hybrides ou metisses en medecine d armee) P Remlinger
37 Action of Radium on War Wounds Mme A Laborde
38 Drainage of Suppurating Knee and Ankle Joints (Drainage des arthrites suppurees du membre inferieur) H Chaput
39 Gargling Syrup (Un sirop gargarisme) R Couetoux

36 **Mixed Diseases**—Remlinger discusses the changes in the clinical picture when two or more diseases develop at the same time and modify each other so that the clinical picture resulting is different from either These hybrid or mixed diseases are particularly liable to occur among troops on a campaign in a crowd of Mecca pilgrims and other agglomerations of persons under conditions of privation Some of the troops early in the war much infested with lice developed a peculiar form of typhoid which was retrospectively diagnosed as typhoid plus typhus The typical hybrid disease is that from the blending of typhoid and dysentery The tendency of the typhoid to stupor attenuates the pains and tenesmus of the dysentery while the latter holds down the fever of the typhoid The puzzling picture presented is explained by the dual bacteriologic findings Such cases have been far from rare during the present

campaign In the French colonies in northern Africa, the hybrid picture from blending of typhus and relapsing fever is sometimes observed In the daily practice of medicine the combination of tuberculosis and syphilis is not uncommon The resulting hybrid lesions are found in the glands in the neck, the cornea, the skin and lungs In the latter the tuberculous lesions generally are grafted on a syphilitic affection of the lung The two diseases may focus on a single point, the hybrid changes are probably in the soil, but the mixed lesion that develops retains the characteristics of each disease and is not a new clinical entity Measles and scarlet fever or smallpox may be superposed, but this is comparatively rare

Presse Médicale, Paris

June 8 XXIV, No 33 pp 257 264

40 *Albuminuria Does Not Always Contraindicate Vaccination Against Typhoid (Vaccination des albuminuriques par le vaccin chauffé triple antityphoidique et antiparatyphoidique A et B) F Widal and H Mery

41 *Characteristic Changes in the Finger Prints With Traumatic Neuritis (Les empreintes digitales dans les lesions nerveuses du membre superieur) R Cestan, P Descomps and J Euziere

40 **Albuminuria as Contraindication to Vaccination Against Typhoid and Paratyphoid**—Widal and Mery have been studying the effect of this vaccination on men with albuminuria of varying intensity The vaccine used was a triple one, against typhoid and paratyphoid, both the A and B types No attempt was made at vaccinating men with signs of severe nephritis, but many of those vaccinated had albumin up to or beyond 1 gm to the liter of urine No harm from the vaccination was evident in any instance The men passing the physical examination admitting them to active service were all in condition to stand the vaccination without injury Those with kidneys damaged too much to permit vaccination should not be allowed on active service Under the influence of the vaccination the albumin content of the urine remained unmodified or dropped a little or showed a briefly transient increase In men with figured elements in the urine before the vaccination, these persisted unmodified afterward or showed a briefly transient increase Others whose urine had been free from them before showed transiently a few reds or whites or tube-casts afterward The urea content of the blood and Ambard's coefficient of urea excretion were determined in all the men with albuminuria Occasionally the findings varied after the vaccination, but the fluctuations were minimal and briefly transient In a typical case the range was from 0 37 to 0 59, and back to 0 38 four days after the third injection, while the Ambard coefficient dropped from 0 10 to 0 07 In others the range was downward None of the vaccinated men showed any signs of renal insufficiency Even those with pronounced Bright's disease manifested the same tolerance for the vaccinations

41 **Finger Prints and Neuritis**—Seven illustrations are given to demonstrate the changes that become evident in the finger prints under the influence of a traumatic neuritis The pores may encroach on the lines, or there may be signs of desquamation or emaciation, the epidermis may be cast off, the lines show gaps, or the whole finger print becomes blurred almost beyond recognition Among seventy men with traumatic neuritis only three failed to show some of the above typical changes in the finger prints The changes did not seem to be proportional to the severity of the neuritis, and they did not always correspond with the innervated area The absence of any changes in the cases of hysteria paralysis was significant The changes which are of a trophic order were encountered almost exclusively with injury of the median and ulnar nerves

Progrès Médical, Paris

June 5 XXXII No 11 pp 81 92

42 *Lead Poisoning From Projectile in the Tissues (Existe t il une intoxication saturnine par les projectiles en plomb retenus dans l'organisme?) Loeper and G Verpy

43 General Principles for Treatment of Wounds of Soft Parts (Traitement general des plaies des parties molles) M Senechal

44 Simplified Litter Bed (Le brancard soulcveur) Rehm

42 **Lead Poisoning from Projectile in the Tissues**—Loeper and Verpy noticed that a number of men who had apparently quite recovered from their gunshot or shell wound presented anemia, albuminuria or intestinal or nervous disturbances for which no explanation could be found unless the projectile still left in the tissues could be incriminated A positive reaction for lead was obtained in the urine from six of the sixteen men tested The projectile was a scrap of lead in these cases Intact bullets did not seem to induce lead poisoning, being jacketed with another metal Some of the men with a 20 gm shrapnel ball in their tissues eliminated daily for months 15 mg lead in the urine The absorption of lead from the projectile varies with the chemical reactions of the tissues in which it is embedded, and with the activity of the circulation in the region Absorption proceeded most actively in suppurating foci and the lung tissue seemed to be most favorable for it Lead was found in the urine as early as twenty-five days after the injury and it kept up in two cases for three weeks after the projectile had been extracted Among the 38 wounded men examined, albuminuria was found in 4, high arterial pressure in 2, and severe anemia in 2, neurasthenia was pronounced in 2, with abolished tendon reflexes in the legs in one of these In another case there was rebellious painful spastic constipation The subsidence of these symptoms after removal of the projectile testifies to lead poisoning as a causal factor Examination of the urine for lead will warn when the projectile is beginning to give trouble For this they collect the urine for two or three days, decompose the organic matter with hydrochloric acid and potassium chlorate (Fresenius and Babo technic), and after treating with sulphuretted hydrogen obtain the typical reactions with the sulphate of lead in the residue

Revue de Gynécologie, etc , Paris

XXIII No 5 pp 353 440

45 *Rupture or Abortion of Bilateral Tubal Pregnancies (Des accidents lies a la rupture ou a l avortement des grossesses tubaires simultanees) R Proust and A Buque

46 *Interstitial Pregnancy (La grossesse interstitielle) C Waegeli To be continued

47 *Pedunculated Flap of Fat for Correction of Large Femoral Herr (Traitement des grosses hernies crurales par la greffe adi pedicule) Chaput

45 **Bilateral Tubal Pregnancy**—Proust and Buquet report an emergency laparotomy on a woman of 29 for sudden severe pains and persisting hemorrhage Both tubes contained an ovum of about two months' growth One tube had ruptured and the other was enormously congested The adnexa were removed on both sides but the uterus was left, part of an ovary must have been left also as menstruation has continued since They compare with this case forty-one similar observations that have been published, although in only thirty-three were the bilateral tubal pregnancies actually simultaneous In conclusion they give the bibliographic references of eighty-two cases of bilateral tubal pregnancy on record Their personal case closely resembles that reported by P Finley in 1910 Among the simultaneous cases mentioned are some published in The Journal, 1912 1913 and 1915 The necessity for careful exploration of the adnexa on the other side is emphasized anew by this group of cases If a hematosalpinx is found on the other side it should be removed without fail, as it is liable to rupture soon In the case reported the intense pain was felt first on one side and at the time of the laparotomy was restricted to this, the ruptured side

46 **Interstitial Pregnancy**—Waegeli encountered two cases of this kind last year and has compiled from the literature 150 cases The accompanying data were so meager in thirty-eight cases that he dropped them from the list His study of the subject therefore is based on 112 published cases and minute study of his own two cases In the latter, intra-ovular hemorrhage entailed abortion at the sixth week, while the pregnancy reached the fourth month in the other case In both the intramural development of the ovum was complete The article is to be continued, Waegeli wishing

to discuss the classification of interstitial pregnancies, the etiology, symptomatology, pathologic anatomy, diagnosis and treatment

47 **Fat Flap to Correct Femoral Hernia**—By using a pedunculated flap of adipose tissue, Chaput succeeded in obliterating the opening with a firm and healthy living pad cover The incision is that for an inguinal herniotomy Then he divides the anterior wall of the inguinal canal and thus obtains access to the femoral ring, after having pushed aside the spermatic cord or the round ligament He draws up the hernial sac into the wound if the hernia can be reduced If not, he resects the sac through an incision in the thigh No attempt is made to suture the femoral ring, it is obliterated by suturing over it the flap of adipose tissue 1 cm thick, the base at the lowest point, corresponding to the pubis, the internal margin to the median line This pedunculated flap is brought down between the peritoneum and the abdominal wall, after resecting its skin surface The flap is sutured to the ligaments of Gimbernat and Cooper and to the crural arch This is facilitated by slitting the flap for 2 cm, one strip passing behind and one in front of the femoral vein He has applied this technic to three women and two men The flap healed in place and the hernia was completely corrected, although the opening had not been made smaller but merely covered with the flap No by-effects or complications were ever observed and the technic, he says, is simple, easy and certain to succeed

Correspondenz-Blatt fur Schweizer Aerzte, Basel

June 3 XLVI No 23 pp 705 736

48 Tuberculosis From the Standpoint of Health Insurance for Soldiers (Tuberkulose und Militarversicherung) R Staehelin
49 Rarity of Anemia Among Persons Who Eat Pod Vegetables in Abundance. (Anemies et chlorophylle) H Maillart

Gazzetta degli Ospedali e delle Cliniche, Milan

May 25 XXXVII No 42 pp 657 672

50 Means to Avoid Unnecessary Amputations (Per limitare le mutilazioni) G Perez.

May 28 No 43 pp 673 688

51 *Utilization of Grapes in Standard Diet (Cura d uva derivati dell uva e digeribilita degli alimenti) E Bertarelli
52 Gas Gangrene S G Torino

June 1 No 44 pp 689 704

53 The Reaction of Degeneration Remote From Point of Attachment of Muscle (La reazione degenerativa a distanza) L Siciliano

51 **Grapes as an Article of Food**—Bertarelli discusses some recent research in Italy aiming to utilize grapes more than hitherto in the standard diet by making them into durable food preparations The unfermented juice of grapes and the pulp mixed with milk ground meat blood or the yolk of eggs seems to modify the protein in such a way as to make it keep much longer and make it more readily digestible This phenomenon of the preserving property of the derivatives of the grape is still an unexplained mystery, but Bertarelli says that he has proved that the phenomenon may be counted on and that vine-growing countries have here an important source of food supply in the production of new articles of diet by various combinations of proteins with the derivatives of the grape

Policlinico, Rome

May 28 XXIII No 22 pp 677 708

54 Mycosis Localized in the Throat (Una nuova micosi con localizzazione nella gola osservata per la prima volta a Catania) G Basile
55 Diagnosis of Bilateral Cystic Kidney Two Cases (Sulla diagnosi del cistoma multiloculare bilaterale del rene Contributo clinico ed anatomo patologico) S Rolando

Jun 4 No 23 pp 709 740

56 Gastritis in Rabbits From Roentgen Exposures. (La radiogastrite ulcerosa nel coniglio con speciale riguardo all azione dei raggi secondari del bismuto) F Ghilarducci
57 Apparatus for Extension of Fractured Leg (Apparecchio a trazione per fasciature gessate nelle fratture dell arto inferiore.) T Cavazzani

55 **Diagnosis of Cystic Disease of the Kidney**—Rolando reports two cases, the patients women of 35 and 57 which illustrate anew the remarkable way in which the kidneys are able to perform their task without symptoms even when studded with cysts Zones of normal tissue are able to carry on the functioning The bilateral occurrence and the lack of metastasis testify against malignant disease The patients usually apply for relief merely from the tumor In one of the cases reported, one of the enlarged kidneys had sagged down into the iliac fossa while the other had become displaced upward, pushing up the left diaphragm This was the case also in the second patient, the left kidney being quite hidden under the pushed up diaphragm

Riforma Medica, Naples

XXXII No 13 pp 337 364

58 *Interposition of Intestine Between Liver and Diaphragm (La epatoptosi parziale da interposizione) F Perussia
59 Experimental Research on the Significance of Local and Generalized Eosinophilia and of Increased Numbers of Leukocytes With Basophil Granulations (I granulociti acidofili e basofili) G Grosso Concluded

No 14 pp 365 392

60 *Intravenous Vaccine Therapy of Typhoid (Nuove osservazioni e considerazioni sulla vaccinoterapia endovenosa nel tifo) A Fagiuoli
61 Antibodies in Serum of Rabbits Vaccinated Against Typhoid (Sostanze immunizzanti comparse nel siero degli animali vaccinati con tifo) F Lanzetta
62 *Physiologic and Therapeutic Action of Training the Respiratory Apparatus (Rieducazione dell apparecchio respiratorio) G Boeri Concluded in No 15

58 **Liver Pushed Down by Interposed Loop of Intestine**—Perussia relates that in the last six years he has encountered a number of cases of partial ptosis of the liver for which organic changes in the gastro-intestinal tract were directly responsible These displace the bowel and a loop is liable to become interposed between the diaphragm and the liver In three of the five most typical cases there was stenosis of the pylorus with gastrectasia, in the other two hourglass stomach from an ulcer, and the colon was unusually large In all the cases the interposed loop of the colon was distended, and the degree of ptosis of the liver was proportional to the distention of the stomach or bowel or both Analyzing the cases of hepatoptosis from interposition on record, he found some anomaly in the gastro-intestinal tract in all This suggests that the main cause of sagging of the liver under these conditions is not from changes in its sustaining apparatus, as hitherto assumed It is secondary to abnormal conditions in the stomach or bowel or both either directly or by the increased intra-abdominal pressure

60 **Vaccine Therapy of Typhoid**—Fagiuoli has been treating typhoid systematically of late with a vaccine prepared by Vincent s technic injecting into a vein from 150,000,000 to 300 000 000 killed germs Larger doses than this are liable to bring on collapse The details of a few cases are related to demonstrate the advantages of this treatment He says that the injection is followed by an intense and prolonged chill, the temperature runs up to 104 F or more and there is often vomiting with or without delirium, while the pulse and respiration grow faster Heart tonics should be given as needed The fever subsides in a few hours, almost always within twenty-four hours with sweating and this defervescence is almost always final The general improvement is marked and the typhoid bacilli disappear from the stools The charts show this sudden drop in temperature The injection was made at the twelfth or fourteenth day in the three cases described There was one relapse among the twelve patients given this vaccine treatment It developed the ninth day after defervescence but subsided promptly after injection of half the usual dose of vaccine A single intravenous injection seems to be equivalent to three or four subcutaneous injections and the latter are by no means always exempt from by-effects

62 **Training the Respiratory Apparatus**—Boeri s account of his extensive experiences in this line demonstrates that not merely better functioning can be realized by the training exercises but the lungs and chest measure can be permanently enlarged The breathing capacity is augmented and bad habits of breathing are overcome, with the insp-

arable consequent improvement in the circulation The exercises he advocates are simple and not fatiguing, and are practiced for five or six to ten minutes several times a day They can be done reclining or erect, deep inspiration and expiration accompanying some regular movement of the arms or trunk Boeri urges to have records taken of the circumference and *diameter of the chest during the different* phases of respiration, before and after, comparing the findings with the spirometer, pneumomanometer, pneumograph, stethograph, and roentgenoscopy He gives specimen curves of these various findings during courses of training of this kind, taken from both children and adults They demonstrate beyond question the benefit derived, and show that the functional tests are far more instructive than the chest measurements The latter may represent merely the residual air

Semana Medica, Buenos Aires

XXIII No 15, pp 407 434

63 *Mitral Stenosis (Estrechez mitral) C P Mayer
64 Impotency and Matrimony From Forensic Standpoint (A proposito del libro del Dr D S Cavia, "La impotencia y el error en la persona en el matrimonio," 1915) J V Gnecco
65 Dengue F Otero
66 The Responsibility of the Physician From Forensic Standpoint (De la responsabilidad medica) A Stucchi

No 16 pp 435 462

67 *The Sanitary Condition of Brazil (Estado sanitario del pais Sus progresos y como se realizaron) J Penna
68 *Thyroid Treatment of Contracture From Rheumatism (Retracciones tendinosas post reumaticas, y opoterapia tiroidea) R G Pizarro
69 Medical Ethics (Etica profesional, deontologia especial y moral medica) A Stucchi

No 17, pp 463 490

70 Apparatus for Artificial Pneumothorax C Mainini
71 Report on Public Health Matters Throughout Brazil (La fu ura sanidad de los territorios nacionales) F Otero

No 18, pp 491 518

72 Post Partum Ileus (Oclusion intestinal post parto) E Mazzini
73 Plasmogenesis (Inducciones plasmogeneticas) V Delfino
74 *Infant Mortality in Brazilian Province P Ivanissevich

63 **Mitral Stenosis**—Mayer lays great stress on tonics and nourishing food for patients with mitral stenosis who have not yet reached the asystole stage General massage is useful and stimulating lotions, while avoiding physical exercise and worry The girl with mitral stenosis should not get married, if married, she should not become pregnant, if a child is born, she should not nurse it When the stage of asystole is reached, heart tonics are called for He gives digitalis in a mild form for ten or fifteen days and repeats this every month

67 **The Sanitary Condition of Brazil**—Penna is chief of the national public health service, and he states that the *mortality for the country has dropped gradually* from 18 92 per thousand inhabitants in 1911 to 15 39 in 1914 The mortality in Rio for the same year was only a trifle lower namely, 15 25 per thousand He gives tables of statistics which show among other things that the preventable infectious diseases are responsible for a larger share of the mortality than in other countries, as the proportion of constitutional, inherited diseases is comparatively small Infant mortality is alarmingly high, *forming* 38 24 per cent of the total deaths in 1911 and 36 55 per cent in 1914 In the systematic campaign against rats, which is being constantly waged, all the railroad stations were freed from rats and the rolling stock disinfected Smallpox has been vaccinated out, from 4,024 cases in 1911 there were only 17 in 1914, a total of 3,035,702 persons having been vaccinated during these four years The total population of Brazil is 7,784,644 (1914) Flying squadrons of vaccinators were sent throughout the country Each of the nine provinces has its central hospital and antimalaria service, with ambulance and portable steam sterilizer The physician in charge has one sanitary guard and eight subordinates These are all in daily communication with the central bacteriologic institute and vaccine headquarters, and the whole system is working finely If kept up along these lines he thinks the mortality *can be* reduced to 10 per thousand in time, but he deplores that congress with ill advised economy has recently reduced the appropriations for this service

68 **Thyroid Treatment of Contracture**—Pizarro's patient was a girl of 15 who had had three attacks of acute articular rheumatism The latest attack left contracture of the tendons of both hands rendering them useless As the contracture persisted unmodified after ten days of ordinary measures, salicylates, iodid and massage, Pizarro stopped them all and started a course of thyroid treatment Benefit was apparent by the sixth day and by the twentieth *normal* conditions had been completely restored

74 **Infant Mortality in Brazil**—Ivanissevich refers only to the province of Mendoza where the infant mortality is exceptionally high, reaching 200 per thousand Out of the 7,300 deaths in Mendoza in 1914, 4,229 were of children under 5 Rivadavia, with 18,000 inhabitants, and a revenue of over $46,000 appropriated only $63 for the care of the sick poor during a recent year Another town with a revenue of $136,309 spent $64 for this purpose, and six others with about $70,000 revenue did not spend one cent for this purpose

Russkiy Vrach, Petrograd

XV, No 14 pp 313 336

75 *Aplastic Anemia and Its Relation to Other Forms of Anemia (Aplasticheskoe malokrovie i ego otnoshenie k drugim formam anemii) V E Predtechensky
76 **Pathology, Symptoms* and *Treatment of False Aneurysms* A A Opokin

75 **Aplastic Anemia**—Predtechensky *says* that *it is neces*sary to admit the existence of primary aplastic anemia caused by congenital hypoplasia of the bone marrow This form of anemia from defective development of the bone marrow may be fatal It is usually combined with hypoplasia of viscera *Frequently* the congenital hypoplasia of the bone marrow is associated with hemorrhages, and this may result in various types of anemia They may resemble posthemorrhagic anemia with *leukocytosis* and *the* presence of normoblasts, in case the bone marrow is naturally strong and healthy When, however, the hypoplasia of the bone marrow is very marked, these forms of anemia clinically resemble the aplastic type Congenital hypoplasia of the bone marrow is frequently combined with hemolytic agents The result may be various forms of malignant anemias which may resemble classic pernicious anemia if the bone marrow is naturally healthy, but with congenital hypoplasia of the bone marrow, the anemia is more apt to be of the aplastic type

76 **False Aneurysms**—Opokin has found false aneurysms during the present war comparatively often, namely, in 52 per cent of blood vessel wounds In about 15.2 per cent of the cases they are caused by fragments of artillery shells *Infection prevents formation of a true aneurysm* In 30 7 per cent of the cases the aneurysms involved both vein and artery Operative treatment of pseudo-aneurysms is indicated not by the length of time that has elapsed since the lesion, but by the force of the arterial collateral branches, as determined by the sphygmomanometer Ligation was the principal method of treatment Suturing was contra-indicated on account of the infection, infiltration of the walls of the blood vessels, presence of large cavities after *removal of* the accumulated blood, etc Excision of the involved portion of the vessels, as near the injured portion as possible, with preliminary ligation, gave quite satisfactory results In 76 4 per cent of the cases of these false aneurysms and in 100 per cent of the arteriovenous variety, the patients recovered

Prakticheskiy Vrach, Petrograd

XV No 11 pp 101 112

77 Improved Blood Counting Chamber (O dvukh kombinatsiakh schetnoikameri prof Burker s sietkoe prof V E Predtechenskago) S I Klmchareff

Hospitalstidende, Copenhagen

June 7 LIX No 23, pp 545 568

78 *Atrophic Chronic Nasal Catarrh (Om Ozaena Med særligt Henblik paa *Coccobacillus foetidus ozænae—Perez*) K E Salomonsen Commenced in No 22

78 **Etiology of Chronic Fetid Nasal Catarrh**—Salomonsen reviews the history of ozena and the various theories as to its etiology, and then describes extensive personal research with Perez' "coccobacillus of fetid ozena" An international collective inquiry on the subject of ozena was launched at the third international laryngology congress, and early in 1914 the committee in charge of it sent out notices urging special research to confirm Perez' and Hofer's statements in regard to Perez coccobacillus Salomonsen inoculated over thirty-eight rabbits with nasal secretions from twenty-eight patients with ozena and thorough bacteriologic tests were applied to the findings His report fills thirty-four pages, and all his conclusions are negative as to the Perez' coccobacillus

Hygiea, Stockholm

LXXVIII No 10 pp 611 720

79 *Histologic Structure of Pituitary Body and Its Tumors and Their Connection With Acromegaly (Hypofysens och hypofysaden omens histologiska byggnad samt deras forhallande till akromegalien) G Kahlmeter
80 *Theoretical Explanations for Transposition of Viscera R Naucler
81 *Bone and Joint Tuberculosis From Modern Standpoint (Nyare åsikter om ben och ledgangstuberkulosen) P Silfverskiold
82 *The Water Level in Examination of the Chest (Vattenpasset i lakarens hand) C E Waller

79 **Pituitary Tumors and Their Connection with Acromegaly**—The conclusions from Kahlmeter's review of recent literature on this subject are sustained by the findings in a case reported in which a miller 45 years old, died from effects of an adenoma of the pituitary body The first symptoms had been noted ten years before, disturbance in vision and headache There were no signs of acromegaly at any time Analysis of this and similar cases seems to indicate that pituitary tumors of the adenoma type, with cells which do not take the acid stains do not induce a tendency to acromegaly while acromegaly is practically a constant accompaniment of such tumors when they are of an acidophil structure This assumption sustains the view that the acidophil granula is the active principle of the secretion of the pituitary body and that excessive production of this is what entails acromegaly

80 **Transposition of Viscera**—Naucler discusses the various theories that have been advanced to explain why this ever occurs illustrating his statements with a typical case of total inversion of the viscera The findings did not afford any special support for any of the theories described Gruber says that total inversion is three times more common than partial inversion The majority of such persons die of pulmonary tuberculosis as in the case here described

81 **Bone and Joint Tuberculosis**—Silfverskiold comments on the changes which the last three or four years have brought in our views on bone and joint tuberculosis and discusses the leading works that have appeared on the subject Andvord in Norway and C Riviere regard infection of children with bovine tuberculosis as almost a mild immunization process Riviere's publication on the ‘protective role of the bovine bacillus was hailed by Meissen of Essen as not so paradoxic as it seems at first glance The great danger from the tubercle bacillus is because it can find a firm foothold in the body without causing symptoms As the focus can develop without causing much local irritation, the phagocytes are not attracted to the spot and this negative or weak chemotaxis especially in the secondary lesions autoreinfections is the secret of the gravity of bone and joint tuberculosis Our present methods of treatment immobilization and injection of iodoform fail in so many cases because they act counter to Nature instead of imitating Nature's healing processes The time is ripe for a complete revolution in our treatment of bone and joint tuberculosis he declares In the first place he insists that every child should have the tuberculin skin test applied at regular intervals every few years When a bone or joint tuberculous lesion is suspected some substance should be injected to induce chemotaxis Even if the exact localization of the focus is not possible chemotaxis induced in its immediate vicinity will act on it practically the same as if directly in it The main point is to detect and act on the lesion while still in its incipient stage Operative measures during the early stages are simple and harmless, he reaffirms, while they do away with a constantly growing menace He bores a passage into or close to the focus and tampons with iodoform gauze for a few days or until the vessels are plugged with thrombi and granulation has begun Then he scrapes out the focus and works into it a strip of gauze impregnated with turpentine ointment or 50 per cent camphor-naphthol This tampon is renewed every day until the focus is suppurating freely After this the intervals can be lengthened until finally the cavity begins to fill up His experience with treatment on these principles has been extremely favorable and he thinks it is applicable also to tuberculous vertebral disease although he has not happened to encounter any such cases in an early stage He describes a technic, however, that he has worked out on eight cadavers and which seems to answer every purpose The aim is to imitate Nature by mobilizing the defensive forces at the spot before the enemy is too well entrenched As a destructive process always spreads along the line of least resistance, the pus and infectious matters escape through the opening made to introduce the chemotaxic substance Among the 2,606 cases of bone and joint tuberculosis requiring institutional care in Sweden in 1913 there were forty-one helpless cripples from this cause Recent figures from Prussia gave 11,300 children more or less crippled from the same He suggests that the benefit from heliotherapy may be due to the action of the chemical rays on the leukocytes similar to their action on amebas the ultraviolet rays repelling them, driving them inward and rendering their ameboid movements and vital processes more active

82 **The Water Level in Examining a Patient**—Waller uses a wood brass and glass water level, about 20 cm long and lays it on the chest at the close of expiration Any asymmetry in the behavior of the chest walls is rendered evident at once as the patient breathes Pulmonary processes, hemorrhage and other conditions can in this way be traced to the lung and the part of the lung responsible

Norsk Magazin for Lægevidenskaben, Christiania

June LXXVII No 6 pp 717 844

83 *Drugs in Treatment and Prophylaxis of General Paresis and Tabes (Bidrag til spørsmaalet Den moderne medikamentelle behandling av paralyse og tabes) W Holland
84 History of Teaching of Dermatology and Psychiatry in Norway H Hopstock
85 *Rupture of Liver of Girl of Twelve Recovery After Operation (Ruptura hepatis helbredet ved operation) P Bull
86 *Climatic Factors Probably Responsible for Character of Epidemics (*Hvorledes man finder genius epidemicus*) A Magelssen
87 Intramuscular Arteriovenous Angioma A Vetlesen

83 **Treatment of Tabes and General Paresis**—Holland declares that in spite of the progress realized in the treatment of syphilis in the last few years—or possibly because of it—the physician's task is no lighter than formerly but more responsible and with new problems to solve Treatment of syphilis in the primary and secondary stages must be continued until the Wassermann reaction has been negative for some time and the spinal fluid gives negative findings The patients must be reexamined every year or so for ten years In eighty-five cases of tabes or general paresis in his service and ninety-three cases of various other forms of cerebrospinal syphilis since 1903 only one patient was known to have had systematic intermittent treatment through two years In forty-nine others treatment had been exclusively symptomatic The details of treatment were not known for the other patients Courses of nucleinic acid, tuberculin and salvarsanized serum in tabes or general paresis proved absolutely useless The cerebrospinal fluid usually gave a negative response finally to the four usual tests and the symptoms from meningeal involvement retrogressed but no improvement was apparent in the clinical picture of the tabes or paresis The only hope he reiterates, is to start treatment in an early stage, but when the patient becomes alarmed about his condition and applies for treatment it is then too late for it It is possible that certain strains of the pale spirochete have a special affinity for the

central nervous system This view is sustained by the cases in which tabes or paresis develop in persons infected from the same source or in husbands and wives He has had a few cases of this kind, but he thinks a constitutional predisposition is more likely In one of his families, two brothers died at 43 and 48 of general paresis, and a third is insane In another family, one man of 50 died of general paresis, his brother of 41 is being treated for cerebral syphilis which developed seven years after the infection, and a third brother has tabes

85 **Operative Treatment of Rupture of the Liver**—Bull's patient was a girl of 12 and the bleeding was severe She seemed to be doing well after the prompt laparotomy and suture of the liver, but the fifth day symptoms of peritonitis became evident requiring further intervention Bile oozing from the suture was responsible for the peritonitis and also for an effusion in the pleura Recovery was complete in two months In Thole's compilation of 752 cases of injury of the liver given surgical treatment, the mortality was 39 5 per cent of those in which the interval before the operation was less than six hours It rose to 86 3 per cent with an interval of twenty-four hours or longer In the 188 cases with simple rupture—like the case reported—the mortality was 55 85 per cent and in over three-fourths of these the bleeding was the direct cause of death Bull thinks that in his case the girl's life was saved by the two liters of saline infused into the saphena before and during the operation

86 **Meteorologic Factors as Influencing Character of Epidemics**—Magelssen gives charts showing the general mortality at Christiania in connection with the average temperature curves through eight decades They parallel each other, rising and falling together, and the same is evident in charts showing conditions in Berlin, Stockholm and Copenhagen These curves demonstrate that the fluctuations in the mortality cannot be ascribed to the merit of hygiene alone They seem to be dependent on the temperature or some unknown factor closely connected with it, which controls the fluctuations in the mortality, the *constitutio epidemica*

Ugeskrift for Læger, Copenhagen

May 25 LXXVIII, No 21, pp 831 878

88 *Pseudoleukemia in Children (Om Pseudo Leukæmi hos Børn) C E Bloch
89 Abortive Copper Ionic Medication of Soft Chancre (Abortiv behandling af Ulcus molle med Kobber Jontoforese) O Jersild
90 Combination of Renal and True Diabetes (Et Tilfælde af Diabetes) E Begtrup

June 1, No 22, pp 879 926

91 *Diagnosis of Typhus (Om exantematisk Tyfus, navnlig dens Diagnose) S T Sørensen
92 *Periodic Acetonemia in Children V Scheel
93 The Continuous Bath for Chronic Suppurating Hip Joint Disease (Permanent Bad) H R Magnus

88 **Pseudoleukemia in Children**—Bloch applied roentgenotherapy systematically and perseveringly in five of the six cases he reports The effect was pronounced in all, the tumors retrogressed, the general health and the blood picture improved The intermittent fever also subsided and the children seemed to be cured, only a few small hard lymph glands could still be palpated, no more than are found sometimes in apparently healthy children This improvement was not permanent, however, the anemia and fever returned and the number of leukocytes rose again, but the lymph glands did not enlarge Under renewed roentgenotherapy, the fever and anemia declined again, but there was little or no influence apparent on the enlarged spleen and the palpable glands The lymph glands seemed to cease to respond to the Roentgen rays in time Reclining out of doors seemed to have a favorable influence, when there was fever the children were kept in bed It seems to be possible thus by combining arsenic and roentgen exposures to keep the disease down so that the children can lead a fairly satisfactory existence, but a cure is out of the question Even this much can be said only of the chronic cases In the acute cases, although the tumors retrogressed notably, yet the general condition did not seem to be influenced in the least, and the roentgenotherapy seemed to depress the child's spirits, and consequently it was not applied in the sixth case All that could be done was to relieve with opiates and complete rest Otherwise the roentgenotherapy had no unfavorable effects There was no albuminuria o other symptom of toxic action although the destruction and absorption of tumor tissue was on a large scale At firs the exposures were made only during afebrile periods, bu later no attention was paid to this In the first three case the neck began to swell without known cause in children between 3 and 5 In six months the broad tumor in the neck had attained a large size but the general health persisted good, the trouble seeming to be a local one at first In the three other children, from 2 to nearly 5 years old the disease developed in an acute form and proved fatal in from one to three months In these three acute cases both parotid glands were much enlarged and tender, as in mumps but they subsided nearly or entirely under Roentgen exposures Bloch does not know of any other acute cases or record with these parotid tumors In one of the acute cases subperiosteal flat, tender tumors developed on the skull and pushed both eyes out of their orbits These tumors did not develop until the leukocytes had dropped to 4,000 The bones of the skull seemed to attract the lymphocytes, causing the tumors Such tumors have been observed in a number of cases, usually in children, in several cases deafness developed from infiltration of the internal ear with lymphocytes There was green pigment in some of the tumors in one case Some writers might call the case one of chloroma and the two others, Mikulicz' disease, but Bloch says that all three are typical pseudoleukemia This disease thus occurs in children, both in the acute and chronic form, and does not differ from the clinical picture in adults more than one would expect

91 **Typhus**—Sørensen reviews his experience with a small epidemic of typhus in Denmark in 1893, a total of forty-three cases, and discusses recent publications on the subject The first case was mistaken for scarlet fever at first, although there were no tender glands and no hyperemia on the skin between the small patches of the eruption on trunk and limbs, the eighth day, and the patient was inclined to be delirious, the tongue dry and fissured The fever of 39 5 C, dropped with the typical zigzag course to normal the twenty-third day of the disease In another case the temperature ranged from 40 to 41 1 C for an average of twelve days, defervescence followed on the twentieth day Sørensen recalls that thirty-one cases of gangrene of the legs were known in the great epidemic of typhus in Finland, 1866 to 1868, in which 14,000, 21,000 and 60,000 persons died

92 **Periodical Acetonemia in Children**—Scheel's two patients were little girls under 3 and 7 The attacks of uncontrollable vomiting, accompanied by the odor of acetone in the breath, and their periodical recurrence were typical of this affection which he calls Marfan's disease The explosive vomiting and the intense thirst may be accompanied by albuminuria, fever and rapid pulse, and the acetone may be eliminated in urine and vomit as well as in the breath The trouble is evidently an acidosis as in diabetes, but both the acidosis and the vomiting are undoubtedly the result of some other factor, some periodically recurring anomaly in the metabolism In the younger child the urine contained 0 2 and 0 35 gm of sugar The child was recovering from nephritis and the sugar content of the blood was normal Others have stated that glycosuria is never encountered with this periodical acetonemia In this case there was no further glycosuria after subsidence of the attack The latter had commenced with convulsions, but there was no vomiting He has seen cases of periodical vomiting in adults, accompanied by acetonemia, and it is a question whether this is the same as Marfan's disease in children As everything is vomited up, an alkali cannot be given to combat the acidosis, it is too irritating by the rectum More important than doing anything to relieve the patient is the refraining from doing the wrong thing One is apt to be misled into diagnosing some surgical affection, while operative measures are superfluous to say the least

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EPILEPSY

WITH SPECIAL REFERENCE TO TREATMENT*

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A disease as old as epilepsy is always interesting and constantly demands our best efforts for its alleviation and its possible cure In order to approach its treatment intelligently, it is necessary first that we obtain as clear conceptions as possible concerning its nature Let us, therefore, briefly review some of the essential facts

It is at once evident that in a large number of cases the history of epilepsy begins before the individual is born, indeed, before the foundation of the organism is laid All writers, ancient and modern, lay stress on the factor of heredity Most writers content themselves with the general statement, others express the fact in percentages Gowers, for instance, found hereditary factors at one time in 35 per cent, and at another time in 46 per cent of his cases, Ahronson in 32 per cent, Siebold in 55 2 per cent, Dejerine in 66 8 per cent, Binswanger in 61 7 per cent, and Kraepelin in 45 7 per cent An unusually low percentage is given by Petges and Cardenal, namely, 22 per cent Differences in the estimates made by different observers are doubtless to be explained by differences as to what they have included under hereditary factors The results, however, justify the conclusion that in a large number of cases these factors are present If all forms of nervous and mental diseases in the ancestry are included, the percentage, of course, rises If the inquiry is restricted to the transmission of epilepsy alone, the percentage, of course, falls The results must further vary whether we include a general or collateral family history of epilepsy or whether we limit our studies to its direct inheritance Again, Kraepelin found in 303 men 44 5 per cent presenting a family history of nervous and mental diseases, but only 32 7 per cent presenting such a history in the immediate parents of the patients Further, when the inquiry was restricted to the occurrence of epilepsy alone, a general family history of epilepsy was found in 13 2 per cent, and its direct transmission from parent to child in only 6 3 per cent In 104 women, Kraepelin found 49 per cent with a general family history and 39 7 per cent with a direct history of nervous and mental diseases 17 3 per cent with a general family history of epilepsy and 11 5 per cent with a direct history It would appear that a family history of nervous and mental diseases is of great significance, and this is indeed in accord with general experience

Other facts must also be taken into account Among these is alcoholism in the ancestry That the children of alcoholics frequently suffer from epilepsy is well known Kraepelin, for instance, found a direct alcoholic ancestry in 18 2 per cent of 303 men and in 19 2 per cent of 104 women That there is here a direct damage of the germ plasm there can be no doubt Again, the role which syphilis in the ancestry plays is also an important one It is probable that syphilis acts much as alcohol does, namely, by damaging the germ plasm In a given number of our cases, moreover, the actual evidence of syphilis can be demonstrated clinically and by the Wassermann reaction in the epileptic children In other cases, while it cannot be asserted that the patients suffer from inherited syphilis, it is probable that the development of the organism has been hampered, arrested, and made deviate and degenerate by the presence of the spirochete and its toxins In the larger number of cases, however, it is probable that the baneful effect of syphilis in the parent has expended itself *mainly in an impairment of the germ plasm* It is probable that toxic factors in the ancestry other than those mentioned, such as lead poisoning and the various infections generally, occurring in the ancestry, may, damage the germ plasm so as to lead to the production of epilepsy in the descendants, but of this our knowledge is as yet insufficient to speak definitely However, that the damage to the germ plasm from the various causes mentioned is not theoretical but actual and real is proved by the signs of morphologic arrest and deviation so commonly present Among these are the anomalies in the size and shape of the skull, the high and narrow palate, the anomalies of dentition, of the ears, of the digits and of the general development We must remember, too, that the signs of arrest and deviation accessible to observation are merely surface indications of other and more fundamental deviations present in the organism throughout

Approaching the subject from whatever point of view we choose, the inference is unavoidable that in a large number of epileptics there has been a primary, a basic impairment of the germ plasm It would appear that this impairment may be general in character, the result of various nervous and mental diseases or of various intoxications and infections in the ancestry, or, the impairment may be special in character and may result in the special transmission of epilepsy

Concerning the direct production of epilepsy in the individual himself by intoxications and infections, the evidence is overwhelming This is notably true of alcohol The sufferer from alcoholic epilepsy is the not infrequent subject of both outpatient and hospital care Lead poisoning also plays a role here, but naturally a less important role Regarding the infections and the rôle which they play in the production of epilepsy, the evidence is also quite conclusive The convulsions which now and then accompany the infectious diseases of childhood are to be regarded merely as epiphenomena of the infectious processes, and are to be explained by a direct toxic action on the cortex Quite commonly they disappear with the infection, they are of consequence only when they persist subsequently Unfortunately, they occasionally persist as established epilepsies Again, epilepsy every now and then follows an attack of typhoid or of scarlet fever, less frequently of measles, whooping cough or influenza Not uncommonly there is a history of convulsions accompanying the infection, and then, after an interval, possibly of months or of years, the establishment of epileptic attacks follows It is probable that in such cases an encephalitis, probably localized and cortical, occurred during the febrile infection, followed subsequently by sclerotic changes, perhaps slight in character, but sufficient to act as the starting point of future epileptic seizures I have only recently studied a case of this kind, one in which an attack followed by weakness of one half of the body occurred during the course of typhoid fever, and in which some years later typical epileptic seizures supervened The occurrence of epilepsy as a sequel of encephalitis the result of infection has been emphasized by Freud, Rie, Marie, Renlich and others

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Another factor in the history of epilepsy is that of trauma Here again the facts are such as not to admit of dispute Certain it is that cases are constantly encountered in the clinics, in which injury to the brain has been followed after a longer or shorter interval by epilepsy Epilepsy following injury to the brain is frequently jacksonian in type, but it is not improbable that changes may supervene in the traumas of childhood which may later give rise to the picture of a generalized epilepsy It is exceedingly probable that in the epilepsies which supervene after intoxications, infections and traumas, actual changes are present in the cortex, possibly of the nature of mild and limited scleroses themselves the sequels of limited encephalitis Allied to such epilepsies are the epilepsies seen in hemiplegic and diplegic children Here atrophic and sclerotic changes more or less pronounced involve the motor area of one or both sides and serve as the cause of the convulsive seizures It is significant in this connection that many epileptics are left handed, in these cases the left handedness is probably an acquired quality subsequent to a cortical left-sided damage in infancy or early life In other cases, it is doubtless connected with some morphologic deviation The epilepsies which are the result of coarse scleroses are in turn closely related to the epilepsies caused by neoplasms and gross lesions generally, these need not here detain us

When we review the facts which have here been hastily summarized, one fact stands forth with striking prominence, namely, that epilepsy is not a specific clinical entity Under the caption of epilepsy are included many symptom groups which differ widely as to their origin and pathology Perhaps this is not surprising when we reflect on the physiology of the brain It would appear that the motor area of the cortex responds by convulsive attacks to both chemical and physical irritants, and that there should be a multiplicity of causes, any one or number of which may bring about an epileptic symptom group, is perhaps just what we should have been led to expect

The lesson taught by the pathologic findings at necropsy are also of great significance and in keeping with what has already been said Many years ago, I placed on record anatomic studies of twelve epileptic brains all of which revealed more or less marked anomalies of the convolutions and fissures These findings were all to be interpreted as phenomena of arrest and deviation A similar interpretation is to be placed on the sclerosis of the cornu ammonis so much insisted on by earlier writers Arrest and deviation are also the significance, as I have already pointed out, of the asymmetries, peculiarities and malformations of the skull

Microscopic studies of the brain have sometimes revealed atrophic changes in the cortical cells, and sometimes a proliferation of the glia, more especially of the cortex in its outer layers, a proliferation which constitutes a kind of gliosis or sclerosis Time will not permit of an enumeration of the findings in epilepsy, the thickening of the calvarium, the thickening of the membranes, the adhesion of the latter to the skull or brain, or the visceral changes which necropsies have from time to time revealed Suffice it to say that no changes are constant, and this is the factor of most significance

If we attempt to classify the epilepsies, we encounter great difficulties It will not suffice, for instance, to divide them into those attended by gross organic changes, such as tumors, massive scleroses, traumatic disease and the like, and those in which no such factors are evident, for many of the latter may, on microscopic examination, reveal the very changes which constitute organic disease We have seen how minute and varied may be the changes and how varied the causes Moreover, it is especially in the group without apparent gross organic cause that hereditary factors play such an important rôle, and in many of this group, again, morphologic arrests and deviations are present which in turn give to the cases a profoundly organic character

Some epileptics present symptoms suggestive of involvement of the internal secretions That such symptoms should occasionally be present is not surprising when we reflect that anomalies of the glands of internal secretion are frequently closely bound up with arrest and deviation No special internal symptom group is presented, occasionally there are modifications of stature and growth, coarseness, dryness, thickness or suspicious infiltration of the skin and, less often, special signs distinctly referable to individual glands are observed In quite a number of epileptics I demonstrated years ago by Roentgen-ray examinations enlargement and distortion of the pituitary fossa due apparently to disease of the hypophysis

Once more let it be emphasized that it is just in the group often embraced under the term "essential" epilepsy that we have to deal with persons in whom the development has taken place in an aberrant and damaged germ plasm, and in which the epilepsy is expressive of an endogenous, autotoxic deterioration The evidence before us is such as to exclude specificity of cause I am, of course, aware of the recent announcement by Reed of Cincinnati of the discovery of a germ as the cause of epilepsy If the correctness of his observations be admitted, it must be equally conceded that they can bear but a limited relation to the great and varied group of diseased states embraced under epilepsy

This consideration as to the nature of epilepsy has unfortunately occupied more time than I had originally intended, but an intelligent discussion of treatment is impossible without it Clear ideas must obtain, first, as to the conditions which confront us and, secondly, as to the objects which we should seek to accomplish A specific treatment of epilepsy is obviously out of the question, and the first step must be the intensive study of each individual case This includes an elaborate study of the family and of the personal histories, a detailed neurologic and visceral examination, including, of course, the laboratory tests of the blood and at times of the cerebrospinal fluid, and, finally and especially, a search for the earmarks of arrest and deviation The latter, it must be remembered, are not only physical but also mental That the treatment must necessarily be influenced by the findings follows of necessity, especially is this true when the investigations reveal gross organic nervous lesions, visceral disease or active infectious processes What shall we do, however, in the residue of cases in which the investigation reveals merely the defective, autotoxic and deteriorating organism outlined in this paper? The task is always difficult, often discouraging and at times hopeless However, not infrequently much may be accomplished and, in a few cases, even definite arrest of seizures brought about

The first indication is that the organism, though defective and deviate, shall lead as physiologic a life as is compatible with its structure To attain this end, a life without physical or mental strain, close to nature, in camp or on the farm, should be adopted by the epileptic This, indeed, is the principle applied in the various epileptic colonies In a given number of cases it is attended by an improvement in general health and a notable diminution in the number of seizures There can be no doubt that the benefit is largely due to the increased oxidation of waste and toxic substances and the general increase of physiologic efficiency which result from an outdoor life In addition, three points should be borne in mind

1 The diet should be so modified that in this organism, already toxic, as little strain as possible be placed on the liver, the thyroid and other defensive glands For this reason the red meats are to be partaken of sparingly The carbohydrates also are to be diminished To take the latter in large amount is to hamper the oxidation of the tissues, an oxidation which for the obvious reason of the autotoxicity of the patient should be maintained at as high a level as possible In the diet, emphasis should be laid on the white meats, the succulent vegetables and milk, eggs also may be permitted Stimulants of all kinds are, of course, to be excluded

2 The various avenues of elimination should be kept freely open If the diet does not of itself counteract the constipation frequently present, a moderate dose of a simple saline or laxative water may be given daily The patient should drink water freely between meals to promote the action of the kidneys, and should take a lukewarm sponge bath daily to promote the action of the skin The bath should not be such as to promote an active reaction, but merely to favor elimination

3 Resort to medicines must, of course, be had in many cases to influence or control the seizures Time will not permit the extended discussion of these, but after all is said and done, experience teaches that chief reliance must be placed on the bromids Regarding their efficient administration, however, one important point must be borne in mind, namely, the principle of sodium chlorid withdrawal introduced by Richet and Toulouse If table salt is withheld, the bromids instead of being eliminated are retained and are effective in much smaller dose I myself have been in the habit for many years past of administering the bromids in the form of sodium bromid, at the same time instituting as rigid a withdrawal of the sodium chlorid as possible There can be no doubt that under these circumstances the sodium bromid takes the place, in a measure, of the sodium chlorid in the tissues If, in a case so treated, the sodium bromid be discontinued and sodium chlorid resumed, the bromid is rapidly eliminated in the urine

But one other point of importance remains In a given number of instances, the physiologic level of the patient may be distinctly raised by the administration from time to time of small doses of thyroid extract, say from an eighth to a quarter of a grain three times daily, seldom more Thyroid in small doses, long continued, stimulates the chain of glands of internal secretion, increases oxidation and promotes metabolism generally

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ABSTRACT OF DISCUSSION

Dr David F Weeks Skillman, N J I want to emphasize the importance of early recognition of symptoms that point toward beginning epilepsy When the patient reaches the institution the disease has usually been of long standing In the collection of data bearing on the heredity of patients at the New Jersey State Village for Epileptics at Skillman we were impressed with the importance of careful study of children subject to periods of unprovoked anger, joy, passion weeping etc and accordingly undertook a special study of children of school age For the purpose of checking our data our field workers investigated the heredity of children showing these epileptic characteristics and tendencies and reported the presence of the epileptic taint in many of these families In some cases these potentially epileptic children later developed epileptic convulsions School inspectors have an excellent opportunity of detecting these children before their seizures have been established and by referring them to the family physician for such care and treatment as will put them under right living conditions may forestall the convulsions and reduce the number of epileptics Our special classes should be reorganized to provide separate classes for epileptics thus removing them from the classes as now established

Dr A L Skoog Kansas City, Mo In connection with institutional or colony cases and cases seen in private practice the point that strikes me in particular is the difference between the two classes of patients It is true that a large percentage of the cases seen in colonies are of the chronic type Their etiology is more obscure than that of the cases seen in private practice Permanent damage has been done, and the etiologic factor or the immediate cause of the trouble is probably no longer at hand I believe that the prognosis is better for cases observed in private practice than for those in colonies for two reasons First, they come at an earlier stage and you have better opportunity for a study of the etiology, and second you can carry out certain treatments better However there are certain types of epilepsies that never should be taken care of in private practice Such patients should be sent to a special colony for care and treatment I like very much the way Dr Dercum handled the subject from the standpoint of calling the condition *epilepsies* not epilepsy I believe it is now almost the universal opinion of students of this broad subject that we are dealing not with a single entity but with a whole group of diseases involving the brain directly or indirectly I believe it is possible that quite a number of epilepsies have their origin in mild or more severe degrees of encephalitis, secondary to one of the various infectious diseases of children It is true that a large number of epilepsies are still described under the idiopathic or genuine epilepsies, so called, and we can say regarding these that the etiology is obscure Some of these cases may have their origin in functional disturbances This also has a bearing on some of the findings observed at necropsy Most cases of epilepsy come to the postmortem table at a late stage Every seizure produces at least a small amount of damage to the brain I have had opportunity of observing three generalized convulsions in epileptics at operations, two of them in the parietal or postrolandic region, and one in the frontal region close to the head centers Two of the convulsions were produced by bipolar electrical stimulation There was nothing focal about the convulsions in either one of these cases, being diffused immediately But the essential point was the tremendous amount of intracranial pressure produced The surgeon with whom I was working at the time became very much alarmed, fearing serious damage from bulging of the brain As soon as the convulsive period was over, not occupying more than one and one-half minutes, the brain immediately receded A condition like this undoubtedly presents the possibility of trauma to the cortex, and that trauma may increase the susceptibility to future seizures

Dr Francis R Fry, St Louis I do not know how much other practitioners and particularly neurologists have been disturbed by a phase of so-called treatment now in vogue We certainly find it a disturbance, because 50 per cent of the epileptic patients who come to us inquire whether or not they shall go over to Cincinnati Some extreme thing of this kind obtrudes itself from time to time, and particularly is this true in regard to chronic affections and often in regard to epilepsy Therefore it is very timely at junctures of this sort that there should come forth some authoritative statement such as the paper that has just been read Dr Dercum has conscientiously told us all that is known to date about epilepsy from any scientific or rational, sensible standpoint And among practitioners, at least, it is something definite to appeal to, coming from one of Dr Dercum's stand

Dr Charles R Ball, St Paul I was much pleased that Dr Dercum brought out the fact that epilepsy is composed of separate entities and is not a single distinct disease It may come from a great number of causes The cause may be mechanically irritative, from any organic disturbance in the brain, or it may be chemically irritative, due to a toxic condition In this connection it is well to take into consideration the secretions of the ductless glands and the toxemias that they undoubtedly cause through irregularities of function With reference to heredity and the influence that alcohol plays, might not the special influence of alcohol on these glandular structures be an explanation for the frequent occurrence of epilepsy in the offspring of alcoholics? I am continually impressed with the very close relationship which seems to exist between the so-called idiopathic epilepsy and migraine Not only have I found migraine in the mother with epilepsy in the child or a reversal of these conditions but in the same patient the epileptic seizure being converted into a migraine I have also seen migraine develop into epilepsy We should attempt to do more for these patients Anything suggested is worth while I believe I have found something that is an improvement over the old bromid treatment, viz, luminal It does not have the bad influence that the bromid has In the great majority of instances patients can take it over a long period of time without untoward consequences Once in a while a patient develops a rash or dermatitis Luminal is chemically similar to veronal, except that the ethyl group in veronal is replaced by one phenyl group I give ⅔ to 1 grain of luminal three times and sometimes four times a day While I am not able to compete with the Cincinnati clinic in the number of patients as yet, nevertheless I find my cases increasing in number

Dr William Ravine, Cincinnati Dr Dercum alluded to the reported finding of a specific organism in epilepsy by Dr C A L Reed Dr Wherry, bacteriologist of the Cincinnati General Hospital, did not find the specific organism, neither did his animal experimentation corroborate the findings of Reed, the organism did not fulfil all the requir ments laid down by Koch We in Cincinnati are not so ve proud of the operation of "short-circuiting" for epilepsy is a far cry from intestinal stasis and its treatment to th cure of epilepsy A great number of these afflicted individua have come to Cincinnati This procedure is quite an extrem measure to resort to in the treatment of epilepsy

Dr Julius Grinker, Chicago Many of these forms o epilepsy are the result of lesions acquired perhaps early i childhood, but not discovered until long afterward, when th epileptic attacks have become thoroughly established Th real etiology of epilepsy is still to be discovered It is tru we have given bromid for many years, and we have n cured our patients, although many of them are kept at worl have become self-supporting, and in spite of the fact tha they occasionally have an attack of epilepsy, they are usef members of the community If we had not treated the medicinally, as some would have us do, and had experimente with the operative procedures which originated with gyne cologists, many of these patients would have been lost an many others would have become invalids Regarding th drugs to be used The bromids are, after all, our ma medicine in the treatment of epilepsy There are patient however, who cannot take bromids for even a short tim without developing acne and pustular eruptions, and bromid ism even after small doses In some instances I have bee handicapped in the management of epilepsy by the fact tha patients could not even take a 10-grain dose of bromids Fo this reason I have resorted to the use of luminal in som cases and the results obtained were very favorable Man patients who could not take bromids well could take lumina in doses of 1½ grains once a day, others needed two dose daily, very few needed three doses of 1½ grains a day There is one point in connection with the administration o luminal that I wish to emphasize Having given luminal, d not change to bromids, because they become ineffective

Dr R A Greene, Palmer, Mass If there are no specifi epilepsies, why is it that in institutions for the insane an feebleminded there are so many cases with exactly the sam heredity, exactly the same lesions, and they do not hav epilepsy? If there is not any specific epilepsy, why is it tha some of these absolutely organic conditions such as the pro nouncedly feebleminded and those with hemiplegia and a sorts of organic lesions, who are mental equals and look li our epileptic patients, do not have convulsions? Must th not be some specific cause of epilepsy? I do not believe th there is any micro-organism to be described, such as th *Bacillus epilepticus* I can conceive that all epilepsies mus have a primary status or causative factor in some metabolic abnormality or internal secretion that is not functioning properly

Dr James H McBride, Pasadena, Calif There are of course many forms of epilepsy, and various causes the epilepsy of traumatism, toxemia, peripheral irritation, etc Two cases of epilepsy due to peripheral irritation that I recall are I think worthy of a brief mention A woman at 30 developed epilepsy during confinement with her third and last child She continued to have two or three fits a year until the time that I saw her when she was 63 On examination I found very large and badly ulcerated internal hemorrhoids They were removed and she has not since had any recurrence of the fits, having now been entirely free from them for eleven years A young man of 20 developed epilepsy while in college and during six months had two violent attacks of grand mal and many minor attacks I found he had very large internal hemorrhoids which were removed This was seven years ago and he has not had any recurrence of the fits As a matter of pathologic interest I may mention the case of a man who was shot in the left eye at the battle of Gettysburg in 1863 He stated that he soon after developed epilepsy and up to the time of his death in 1889 had a discharge from the left ear

On necropsy I found the bullet lying on the temporal bone just over the middle ear It had entered at the orbit, passed to the temporal lobe and gravitated to the bone below, where it had produced an abscess and necrosis of the bone by which the abscess had discharged into the middle ear and perforated the tympanum The bullet which I removed in three pieces had remained in the skull cavity for twenty-three years

Dr Joseph M Aikin, Omaha I desire to make an inquiry regarding the relationship between migraine and epilepsy In taking the history of patients complaining of epilepsy, I am impressed with the frequency of epilepsy, where there is a family history of migraine I have wondered if the pathogenesis of migraine and epilepsy may not be practically the same whether it be a specific germ or whatever the cause I have in mind a young man whose history was that he had sick headaches until 17 At the age of 27 he came to me seeking relief from epilepsy, alleging that his epilepsy began at the age of 17, at which time his headaches ceased, and that his epileptic attacks had supplanted his headaches for ten years Another case is that of a boy 8 years old who had a family history of migraine, suffered severe attacks of migraine till 14 years old when without warning he had an epileptic convulsion For six consecutive months he had on an average two or three epileptic convulsions a week, but no sick headaches At the expiration of the six months the epileptic convulsions ceased and for eight years past he has what he had formerly, sick headaches The relationship between the two conditions leads me to think of a toxemia of some kind whether of endogenous or exogenous origin I do not know

Dr William J Hickson Chicago No one has mentioned the association of hysteria with epilepsy and perhaps I should take that fact as evidence of its not being of significance My cases are sent to me by the probate court, and I have made some detailed studies of the relationship of hysteria to epilepsy in certain cases I am sure that I have done the patient, his family, and his community a real service by directing treatment to the hysteria and then turning the patient back with his small remnant of epilepsy

Dr Francis A Ely, Des Moines Iowa Fortunately or unfortunately I have been recruited from the ranks of the general practitioners into those of the neurologists I have had the opportunity of observing a great many instances of head trauma in children and have attended a considerable number of difficult confinements I am impressed with the fact that we should attach a great deal more importance to head trauma as a factor in the production of epilepsy Since the Roentgen ray has come to our service it has been interesting to note that many instances of apparently slight head trauma in children have shown definite skull fractures and serious head lesions We are all familiar with the great compressibility of the head of the child in coming through the birth canal, and those who have had any general practice will remember many instances in which infants have been very difficult to resuscitate They will also perhaps remember many others in which a week or so following birth temporary epileptiform manifestations have occurred I believe that in many instances such children in later life become epileptics and I simply make this observation in order that we may not forget that head trauma both in the infant at birth and subsequent thereto are probably very important factors in the causation of epilepsy and that there are many so-called idiopathic epilepsies which are indeed of traumatic origin

There are undoubtedly a great many cases of encephalitis which escape the observation of the general practitioner and yet if these patients were subjected to a critical examination at the time of their illness definite encephalitic symptoms might be observed This type of cases also undoubtedly increase our list of those ascribed to unknown or idiopathic influences

Dr C Eugene Riggs St Paul The pessimism of the profession with regard to the treatment of epilepsy has had a disastrous effect on the laity and consequently they have been willing to take hold of any will-o-the-wisp that presented itself Last month at the meeting of the American Neurological Association in Washington attention was called to the use of extract of pancreas in the treatment of epilepsy Epileptics usually have a high blood pressure, which is indicative of epinephrin in excess Pancreatin neutralizes this excess It should be given in 5 grain doses, after meals It certainly has a decided influence in lessening the frequency of the convulsive seizures It has been in use such a short time that no statement can yet be made as to definite results It should be given a fair trial

Dr I Leon Meyers, Chicago Epilepsy has from time to time been ascribed to structural changes in the brain As a matter of fact however, there is a striking difference between idiopathic epilepsy and jacksonian epilepsy In idiopathic epilepsy there is practically always a loss of consciousness or at least a clouding of consciousness, whereas in jacksonian epilepsy consciousness is frequently retained This shows that idiopathic epilepsy very frequently originates in parts of the brain other than the cerebral cortex We know that we can remove the entire cerebrum without complete loss of consciousness, the loss of consciousness in idiopathic epilepsy would therefore point to an etiologic factor in the more vital centers of the brain We are often impressed with the similarity between toxic epilepsy and idiopathic epilepsy I had occasion to observe one case of idiopathic epilepsy in which the patient had typical tonic and clonic convulsions a short time after I had seen the convulsions in an animal on an injection of oil of absinthe and I was struck by the great similarity between the two This would speak in favor of the toxic origin of epilepsy It is well known that in producing convulsions in animals by the administration of strychnin or any of the other convulsants, if you touch the fur of the animal it promptly goes into convulsions All that is needed to produce a powerful convulsion-reflex is the application of some kind of stimulus This will explain the cases in which it has been noted that slight irritations produced attacks of idiopathic epilepsy If the body is saturated with a poison having toxic properties similar to those of strychnin or absinthe then a slight external stimulus is sufficient to produce generalized convulsions This is evidenced also by the aura It seems that there is some kind of poison in the blood affecting the lower level centers, and a slight stimulus which manifests itself by a certain aura brings about the generalized convulsions But unconsciousness supervening immediately the aura is cut off and the patient s knowledge of the stimulus is vague and indefinite From my observations of convulsions in animals as well as in men, I believe that idiopathic epilepsy is toxic in origin, and not due to organic changes in the brain Of course, organic changes in the brain may cause convulsions but they are not, I think the cause of genuine idiopathic epilepsy, and I heartily concur with Dr Dercum who spoke of epilepsies and not epilepsy

Dr David S Booth St Louis It is quite evident that there are a great many causes of epilepsy, but many of them are toxic and I have no doubt that a large number of these result from toxins in the alimentary canal especially in the intestines A number of years ago Professor French of the Southern Illinois Normal University discovered an intestinal parasite which he called the *Gastropholus epileptalis* and which he thought was the cause of many cases of epilepsy, hence the name given to it However the examination of the feces of I believe over a thousand cases revealed only a few infections with this parasite So Professor French decided that this was not the cause of all the cases of epilepsy Epilepsy may be due to rectal trouble as I have noted in several cases A case under observation was that of a physician in whom epilepsy was cured without any medicine whatever on the successful treatment of a rectal ulcer As to treatment parathyroid extract has not been mentioned and I would like to know whether calcium has been used to any great extent I have used calcium bromid with some good results but perhaps no better than have been secured in some other cases not treated with this agent

Dr Robert McGregor Saginaw Mich I would like to ask Dr Dercum if he has ever used or heard of the use of, cerium oxalate in epilepsy Usually the addition of strychnin or digitalis to a bromid mixture will lessen the amount required

Dr J Matthew Pulliam, Fort Wayne, Ind I believe our main trouble is that the general practitioner throws up his hands in horror when an epileptic walks into his office, saying that there is no treatment In my opinion the principal thing in the treatment of epilepsy is elimination, and I am not afraid of sodium chlorid and I do eliminate with sodium chlorid, giving a hard pressed normal saline tablet by mouth so that it will dissolve slowly in the stomach I give with this a tablet composed of ⅓ gr aloes, 1/40 gr extract cascara segrada, 2½ gr each of bicarbonate of soda, bicarbonate of potash and magnesium sulphate six times a day with a full glass of water Just try it and see what the elimination is That of itself will reduce the number of convulsions There is nothing equal to bromid to stop convulsions In looking over my records for the past ten years I find forty cases of epilepsy, thirty-two of which have had no attacks during a period ranging from two to eight years

In regard to treatment with bromid, there is one point which may be applied to the dosage of bromid Watch the blood for the hemoglobin content Give the bromid until you have a drop in hemoglobin of 10 per cent, and you will find a drop in the hemoglobin content if you go high enough Then cut the dosage in half, giving two weeks and intermitting two weeks I accidentally discovered this fact nine years ago and have treated every case along this line Up to this time I have not made any mention of it, not knowing whether the point was a practical one or not, as I have had but forty cases in which I could observe the effect In the state institution at Logansport and Government Hospital at Washington, D C, we had hundreds of cases, but all beyond the stage where we could do anything Every one has neglected to treat the child A girl came to me yesterday, aged 22, who at the age of 4 years had epileptic convulsions A doctor treated her and her convulsive seizures ceased On coming to womanhood she again developed epilepsy The seizures started again when, because of development, extra work was put on the nervous system Now I am giving bromid as I give iodin, in gradually ascending doses with remission, giving it two weeks and stopping two weeks I take no account of a convulsive attack—it is not the cause, it is only the result A toxic process is at the bottom of the trouble Any man giving bromid without the promotion of elimination is wrong, although it does help for a time So far as bromism is concerned, it is a very easy matter to prevent this In regard to the skin eruption, Fowler's solution is specific Give it in ascending doses in connection with bromid and you will not get much bromism

Dr Foster Kennedy, New York We have had so many dogmatic assertions in this discussion of epilepsy that perhaps it would be well for us here and now to confess that we do not know anything definite about the etiology of this condition The best proof of our ignorance is that so many different theories are put forward and accepted From the West we hear of the epileptococcus and the removal of the large intestine, and from the East we are told that epilepsy represents an effort of the individual to resume his fetal position in the mother All these various propositions are put forward perfectly seriously by speakers While we can do a good deal to alleviate and to investigate, it is well at the outset, in order to reach the truth, to clear our minds of any delusions that we know much more than did our forebears about this subject

Dr Walter Timme, New York We cannot treat epilepsy as a disease, we have to treat the epileptic as an individual Therefore, in one case we get results with sodium chlorid, while with another we do not Another point is this That the introduction of the endocrine glands into the therapeutics of epilepsy must be done guardedly You cannot give thyroid constantly as you would bromid, without endangering the balance of the internal glandular system and perhaps converting an epilepsy into, or even adding to an epilepsy, a glycosuria or an exophthalmic goiter, both of which contingencies have occurred You cannot give a patient thymus, nor can you give a patient suprarenal gland, forever, without disturbing the same balance You must give first one, then the other, or a third, or none You may give one of the glands for a week, it may be necessary to give it for a month, but each patient must be the criterion of the treatment And unless you do that you are bound to fail Two points to show the close interrelationship between the endocrine glands and epilepsy might be cited, as follows There is a seasonal variation in the epileptic attack Seizures are always more severe and frequent in spring, also in the spring there is an increased thymus activity and an increased pituitary activity Another point is that at those critical periods of life, such as the menopause, such as puberty, epileptics either are cured spontaneously or their troubles spontaneously get worse And it is at just those periods also that the endocrine glandular system is called on to exert itself to its utmost There is a parallelism, therefore, between disturbances in the endocrine gland system and apparent spontaneous changes in the epileptic seizures

Dr L Kauffman, Buffalo, N Y The question of calcium in the treatment of epilepsy has been touched on Colloidal chemistry has a very strong bearing on the metabolic condition of the human body Dr G H A Clowes, chemist to the New York State Cancer Institute at Buffalo, finds that there is a certain balance which the body normally maintains between calcium, on the one hand, and sodium on the other, and that as soon as you disturb this balance one way or the other there is trouble which may manifest itself in spasm, as tetany, etc, and epilepsy can likewise be considered one of the forms of disease ensuing With Dr James W Putnam of Buffalo I have employed calcium with considerable success Of course, we must first take into consideration elimination, the various causes of irritation must be removed, and all the other possibilities taken care of, if then metabolism is the factor, try calcium lactate It is a better drug for the purpose than calcium chlorid It does not irritate the stomach, and you can use 30 to 60 grains three times a day in a glass of water over a long period, but I think it better to use it over short periods We have had favorable results and complete cures in cases so far studied

Dr George A Moleen Denver In the treatment of epilepsy so many things have been advocated that conservatism and suspended judgment are demanded The relation of hysteria to epilepsy is, I believe, showing a very perceptible narrowing of the gap I would reserve my opinion of luminal, which has been used so largely in German clinics, because of its very close relative veronal, for we are seeing increasing numbers of habitues of veronal now Therefore, it would seem that the same judgment should be applied to the use of luminal as would be applied to the routine use of opium

Dr F X Dercum, Philadelphia I have been impressed by the consensus of opinion with regard to epilepsy, namely that epilepsy represents a multiplicity of conditions of which the convulsive seizures are merely epiphenomena We should entertain clear ideas with regard to the principle of salt withdrawal as originally advocated by Richet and Toulouse Salt is not of itself especially harmful to epileptics but during bromid administration salt withdrawal should be practiced as thoroughly as possible, for the reason that the bromid, in a measure, replaces the sodium chlorid in the tissues and is retained in the tissues for a much longer period than otherwise In a case in which sodium chlorid has been withdrawn for some time and the sodium bromid freely administered, the sodium bromid will be eliminated rapidly in the urine when sodium chlorid is again taken, showing that there is an interrelation between the sodium chlorid and the sodium bromid in their retention and elimination I could not, of course, in my paper enter into a discussion of the various other drugs which are being used in epilepsy We are not infrequently forced to abandon the bromid and to try other remedies I have also had a rather favorable experience with luminal I have not, however, used it over very long periods of time because I have been afraid of establishing a habit In regard to Dr McBride's case, we all recall the fact that trauma, surgical operations and incidental infections, such as typhoid, frequently inhibit epileptic seizures for a greater or longer period It would appear that the causes which modify the metabolism of the body for the time being influence the frequency of the seizures Operations on the intestinal tract, not infrequently performed at the present day, such as gastro-enterostomy, excision of the colon, etc, recall to our minds vividly the sad experiences of the profession years ago with regard to the influence that pelvic surgery was supposed to have on hysteria, epilepsy and other functional nervous diseases, an experience which should have convinced us as to the futility of such measures Again, shall we experiment on our patients with poisons, autotoxins and what not, in diseases which are essentially morphologic and neuropathic in their character? Sanity demands that we should now and then review the knowledge which our ancestors and we ourselves have so painfully acquired in order that we should not allow ourselves to be deluded into wild and inexcusable undertakings

THE PREPARATION OF THE PATIENT FOR OPERATION *

WALTER B LANCASTER, MD
BOSTON

In discussing the preparation of the patient for operation, I wish to consider his mind, his body in general and his eyes in particular

In preparing the patient for operation, we should aim to "rob surgery of its terrors" (Moynihan) This preparation must begin with our initial examination of the patient, our method of broaching the subject of operation, our sympathetic attitude toward his ignorant prejudices and fears All this is as truly a part of the successful surgeon's training and equipment as his mastery of asepsis and other matters I shall soon discuss

There is no one here but has himself felt the depressing effect of fear, dread, anxiety, worry, embarrassment and the stimulating tonic effect of hope, courage, faith, sympathy, religion, some one to lean on Why do we not more systematically and deliberately set ourselves to utilize these facts?

In taking the history of the patient, special attention should be paid to previous operations, the anesthesia, convalescence, complications If the patient has any idiosyncrasies it is important to know them

GENERAL EXAMINATION

The condition of the circulatory, digestive, renal and nervous systems should be investigated with more or less thoroughness according to the nature of the operation and whether or not general anesthesia is to be employed While the whole subject is open for discussion, I pass over syphilis, tuberculosis, alcoholism, pregnancy, heart disease and others for lack of time

The importance of the digestive tract has always been recognized, but the more we learn about it the more important it seems to become Free action of the bowels must be secured *and maintained* In our desire to secure an empty colon, however, we must be careful not to so upset the patient as to do more harm than good This is likely to happen now and then if a routine treatment is ordered for all patients without individualizing Often it is well to order the treatment — cathartics or enema — not the day before but two or three days before the operation so that if any undue disturbance is created it may have passed off before the operation, and if the treatment has not been effective it may be repeated

Too great zeal in preparation, too many baths and enemas and purges and dieting tend to induce a state of nervousness in a person, especially if elderly, who is entirely unaccustomed to such procedures and to whom they are very distasteful In these cases the mental preparation is often more important than the physical, and the patient should be brought to the operation with the minimum deviation from his established daily mode of life Not a few of these patients do better when operated on in their own homes, but the work and anxiety of the surgeon are greatly increased and there are other obvious disadvantages, so that on the whole a hospital is the best place Sudden changes in the patient's habits or mode of dress are to be avoided, for example, giving the patient a warm bath and then putting on cotton night clothing when the patient has been wont to wear flannel, shampooing the hair against the patient's wishes, or having the windows open more widely than is the patient's custom What though the patient's habits have not been up to the latest hygienic standards, this is no time to reform him! Let us get him through his operation and convalescence as quickly, safely and comfortably as possible

NOSE AND MOUTH

The nose and mouth are but little less important than the colon It is difficult in any particular case to trace trouble with the healing of an eye to foci of infection about the teeth or tonsils or sinuses because so many thousands of patients have these foci who do not present pathologic results in the eye

I believe that most of the mild cases of uveitis following cataract or similar operations are due to slight infections from the operation Some are noninfective, but due to the toxic action of lens material (This is denied by Treacher Collins) Some of the slightest and most evanescent are due to trauma pure and simple, but it is becoming more and more clear that a fair proportion must be ascribed to the same causes as uveitis in nonoperated eyes, namely, to foci of infection in other parts of the body An operation like any other trauma is just the determining factor needed in such cases to enable the pathologic influences, already at work, but till then ineffectually, to start up the inflammatory process It matters not whether these foci of infection act through their toxic chemical substances, or, as seems more probable, through the micro-organisms themselves

When the anterior chamber is evacuated, there is a great increase in the flow of fluids through the eye Thus if fluorescein is injected into the general circulation, none may appear in the anterior chamber or eye, but if paracentesis of the cornea is done, staining may quickly follow This is of great importance as showing how the antibodies and protective materials are carried to the wound when the anterior chamber is opened Probably many eyes could be saved by a more frequent use of this means of bringing up reinforcements Sometimes it may be well to open the anterior chamber not only daily but several times a day in combating severe infection It is beneficial also as a means of drainage On the other hand, it seems probable that this same enormous increase in the flow of currents through the eye may serve to bring deleterious agents, whether chemicals or organisms, to the eye in too large amounts, and so an endogenous infection may be set up which otherwise might never have occurred, although there was a focus of infection somewhere all the time

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* Because of lack of space this article is abbreviated in The Journal. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association, Detroit June 1916

The bearing of this on the preparation of a patient for such an operation as cataract is obvious We should eliminate as far as possible all foci of infection, which, if circumstances should be favorable, might cause an iritis The mouth and teeth should be cleaned up in the surgical sense The tonsils and sinuses should be cared for

I wish to call particular attention to the possible danger of these foci of infection to the patients with the thin conjunctival "bleb" which so often follows sclerocorneal trephining I believe that some of these tragic late infections could be traced to suppurating ethmoids, bad teeth or the like

ARTERIOSCLEROSIS

Arteriosclerosis interests us chiefly because it is often the important factor in intra-ocular hemorrhage It acts in two ways by the high blood pressure and by the weakened vessel wall The healthy blood vessels have a wide margin of safety in their strength to withstand pressure, but endarteritis and endophlebitis greatly reduce this margin

The intra-ocular pressure tends to support the arteries and veins, so that the vessel walls do not sustain the whole of the blood pressure in them When the eyeball is opened, all this support is removed quite suddenly, and so the whole of the blood pressure has to be borne by the vessel walls practically unaided

It is obvious that we have two ways of avoiding this sudden increase in tension on the walls of the vessels produced by opening the eyeball We can reduce the pressure in the vessels and we can reduce the pressure in the eye

The pressure in the eye can be reduced in cases of glaucoma, by miotics vigorously pushed and aided by ethyl-morphin hydrochlorid (dionin) and cocain and ocular massage Rest in bed with light diet and purgation are important aids, and some sedative to subdue nervous excitement and anodynes to relieve pain are obviously indicated In case of acute congestive symptoms, leeches will help When one cannot take the time required to reduce intra-ocular pressure by these methods, or when they are ineffective, one can and should tap the vitreous by scleral incision, permitting slow escape of some of the contents of the eyeball

Where intra-ocular hemorrhage is to be feared, reduction of blood pressure is even more important than reduction of intra-ocular pressure, unless glaucoma with high tension is present, when both should be reduced

In the reduction of the general arterial blood pressure the following are the chief resources at our disposal, and we may wisely invite the cooperation of the internist in their selection and use, for arterial hypertension is sometimes compensatory, in which case it is not ruthlessly to be interfered with, while if it is due to the presence of toxic products, the result of faulty mode of life, it should be remedied, of course rest in bed, say a week before operation, if not contraindicated, milk and farinaceous diet restricted in quantity, mild purgatives, mental respose, sleep (blood pressure usually falls in sleep, often from 30 to 50 mm), enteroclysis, avoidance of what puts increased demands on the kidney and therefore on the circulation, as salt, alcohol, gravies, soups, extractives, or too much water, hydrotherapy, warm baths, electric light baths, massage with Swedish movement, phlebotomy, not less than from 300 to 500 c c Nitrites are especially valuable when a prompt effect is wanted, even if it is only fleeting Thus nitroglycerin, 1/100 grain, may be given every fifteen to twenty minutes until some effect is produced which either satisfies our requirements or is a signal to stop

As to general anesthesia, ether does not alter arterial tension much Nitrous oxid increases it

In a case in which immediate operation is required, the arterial tension can be lowered quickly by nitrites, or failing that, by phlebotomy, the intra-ocular pressure can be lowered by cocain and massage, or if necessary, scleral puncture, but this must not be so done as very rapidly to reduce the ocular tension, or intra-ocular hemorrhage will be quite as likely to occur as on opening the anterior chamber

PREPARATION FOR ANESTHESIA

I pass over the well known precautions as to the mouth, stomach and intestinal tract If narcosis is to be used, there is a difference of opinion as to the use of morphin It is the belief of a majority that a hypodermic of morphin shortly before the beginning of the narcosis will make it easier for the patient and for the anesthetist To secure a good sleep the night before, adalin and veronal, or bromid and chloral may be used, and if necessary may be repeated the morning of the operation to subdue nervousness This preparation is important when a general anesthetic is to be used, for local anesthesia it is indispensable

It is not desirable for the patient to be too thoroughly doped in preparation for muscle operations or other operations on the globe, for we want the patient's cooperation One should try to secure such a dosage of the sedative drugs as will produce freedom from worry and undue dread, without anything approaching stupor

EXAMINATION OF THE OTHER EYE

That an examination of the physical condition and functions of the eye should precede operation hardly needs to be emphasized One thing should never be omitted before any operation, and that is to learn the condition of the other eye If that is useless or nearly so, one should consider well the serious responsibility he assumes in operating on the only good eye

THE SKIN

For the preparation of the patient's skin we have two approved methods

1 Wiping with a cotton sponge, moistened with benzin (this is especially good for the lashes), washing thoroughly with soap and water followed by mercuric chlorid, 1 1,000, drying, and applying alcohol

2 Application of tincture of iodin to the dry skin (previous washing reduces the efficiency of this method), which is valuable for quick preparation in an emergency The lids may be irritated by iodin, causing itching or even eczema with vesicles, etc Hence many have either given it up for regular use or reduced the strength to one half Fresh tincture is less irritating than old Eyebrows, if long, may be plastered down with collodion, as suggested by Elliot (In extensive plastic operations they should be shaved) Lashes should be clipped short where they are likely to be touched by instruments If a speculum with a blade covering the lashes is used, only the outer fourth of the lids needs to have the lashes cut

If an ordinary speculum is used, all should be cut Elliot points out that the lashes should be cut sufficiently short with the first stroke of the scissors, since short, stiff fragments cut off with the second cut are hard to get rid of and very irritating to the conjunctiva If the scissors are anointed well with sterile petrolatum, the hairs will adhere to them as they are cut

LACRIMAL SAC

The lacrimal sac requires most careful examination Pressure will not always squeeze out anything from a diseased sac, for it may have been squeezed shortly before the examination, or it may be so protected by the anatomic conditions and small size of the sac that nothing is pressed out A safer and surer way is to syringe through the lower canaliculus with a syringe whose tip is small enough to enter the punctum after it has been slightly dilated, but not cut Liquid should run through without forcing A partially obstructed lacrimal duct is dangerous as well as a completely stenosed one Argyrol or fluorescein instilled in the conjunctiva should appear in the nose within ten minutes Usually it is sufficient to have the patient hold the head forward ten minutes and then blow the nose into a piece of gauze If this is negative, to make sure, a small wad of cotton should be placed in the inferior meatus close to the lower end of the duct and a second instillation made It is possible for argyrol to work its way through a passage too small for free natural drainage of the sac and as Duane has pointed out, this is a method of overcoming an incipient stenosis by treatment without probing Frequent instillation of argyrol may reduce swelling and clean out the duct and restore free drainage Unless one is fully convinced that the lacrimal sac and duct are free from obstruction and disease, he should not omit syringing, and if still suspicious, the canaliculi should be tied by a suture passed around both a few millimeters to the nasal side of the puncta, and the puncta may be seared with a pointed cautery After a week when the wound in the eye has healed, the stitch may be removed, and if the puncta were seared they may be opened again with a suitable dilator

There is another condition which requires suture of the canaliculi, or sealing of the puncta by cautery, and that is the presence of a dangerous condition in the nose, as ozena or ethmoiditis

When the duct is definitely stenosed, a brief course of treatment may be tried, but if a very few probings and syringings do not secure free drainage into the nose, the sac should be extirpated This is the safest treatment in most cases The immediate result is an increase in the bacterial content of the conjunctival sac so that it is not wise to operate for two or three weeks, during which time treatment to improve the conjunctiva and reduce the number of bacteria should be carried out

CONJUNCTIVA

All investigators are agreed that since instruments, sponges and collyria can be surely sterilized and hands can be kept away from contact with the operative field, the great source of danger is the conjunctival sac Most postoperative infections have their origin in the conjunctiva

We have a peculiarly intricate and difficult problem, then, for not only are organisms always present, often of dangerous varieties, but if they are ignored, only 5 to 6 per cent of eyes will suppurate, as in prelisterian days It is not like an operation on a knee joint where any departure from strict asepsis is almost sure to be followed by disaster Disaster in eye operations comes in only a small percentage of cases, even with very loose and unsurgical methods of asepsis Finally, the best operators are not in agreement as to the best methods of ocular asepsis

There are three schools or methods which are supported by sufficiently good authority and argument to command our study

1 Method chiefly urged by Elschnig of Prague, Axenfeld of Freiburg, and Browning of London

Before any cataract or similar operation, cultures of the conjunctival sac are made by instilling a special culture fluid into the sac and sucking it up again with care to avoid contamination with the lid margins, incubation is carried on for twenty-four hours, a stained smear is examined, and if streptococci or staphylococci or other dangerous organisms are present, operation is postponed till suitable treatment has, if possible, eliminated the unwelcome organisms If no dangerous organisms are found, operation may proceed This will be in about 70 per cent of the cases If the appearance of the conjunctiva is suspicious, one should wait more than twenty-four hours until the culture has incubated longer

2 The Vienna method of Fuchs and his followers

One decides whether or not it is safe to operate by the clinical appearance of the conjunctiva If that appears clean and safe, the operation may be done at once If not, treatment should be given until the pathologic conditions are remedied Cultures are misleading The eye is prepared at the operation by the operator himself The skin is wiped with cotton moistened with benzin, followed by washing with a special soap and 1 1,000 mercuric chlorid The conjunctival sac is wiped with swabs and then irrigated forcibly If the eye is of the class called clinically clean, normal salt is used for the swabs and irrigation If it is regarded as suspicious, mercuric oxycyanid, 1 2,500, is used for the swabs and irrigation

3 Indian method advocated by Herbert and Elliot

In the presence of active infection, operation is postponed until this has been remedied (for example, the lacrimal sac is extirpated) To determine the presence of active conjunctivitis, a test bandage is used If this shows no significant discharge, even if the conjunctiva is thickened, rough and diseased, the operation may be safely done, provided the following method is carefully carried out Fifteen minutes before operation the everted lids are irrigated with 1 3,000 mercuric chlorid under a head of 3 feet, moving the lids vertically so the stream will penetrate all folds and especially around the caruncle and fornices Irrigating is continued at least a full minute and longer if the desired result is not obtained, namely, secretion of grayish mucus, or if the mucous membrane is so scarred that this does not occur, until clouding and opacity of the epithelium from superficial coagulation necrosis occurs This is followed by epinephrin to control the hyperemia, and then cocain at intervals for fifteen minutes If insufficient effect was produced, it will show now by absence of mucus or opacity, and further irrigation with mercuric chlorid may be done, but usually at this stage irrigation with normal salt will suffice Elliot adds at this point, before irrigating with saline wiping of the conjunctiva with sterile swabs, moistened with saline

We may be guided in our choice between these methods by the statistics of series of cases treated by the different methods, or by the arguments and theories advanced in support, and finally by our own experiences and prejudices

The results of the Indian method of prolonged irrigation with 1 3,000 mercuric chlorid are far superior to those of the other methods Herbert's last 1,655 cases were free from panophthalmitis, and there were only two cases of iritis severe enough to close the pupils

After Elliot was induced to adopt this method by seeing the remarkable results obtained by Herbert, he had one suppuration in the first thousand cases (due to an undiscovered suppurating tear sac) Since then he has had thousands without a suppuration Herbert and Elliot say that suppuration has been practically eliminated since they adopted this method and perfected other details Even nonsuppurative inflammations are very rare Moreover, the conditions under which these operators worked, and the class of patients, were both less advantageous than are found in Europe and America

Other Indian operators have followed similar methods, and if statistics have any meaning, their results must carry great weight The enormous numbers of cases in which operations were performed under fairly uniform conditions make the statistics peculiarly convincing

Statistics of Fuchs' clinic as reported by Lindner[1] show results varying with the skill and experience of the operator from one suppuration in 509 cases, or two in 664 cases, down to four in ninety-five cases during the same period of time and with the same methods It is evident that the Fuchs method makes use of the swabs and irrigation with mercurial lotion similarly to Elliott, only less prolonged and using oxycyanid instead of mercuric chlorid and limiting the mercurial to the suspicious cases Now it has been abundantly shown that cases which clinically look clean may harbor dangerous organisms Washing with normal salt solution will mechanically remove many, but if mercurial is regarded as safer when dangerous organisms are thought to be present, why not use it when it is not known that they are absent? The far better statistics of Elliot, Herbert and other Indian operators would seem to show that they are nearer right in their method

Let us look at the statistics of those who use the bacteriologic findings as a guide to operation From Elschnig's clinic there is reported a series of cases with 0 5 per cent failures and 3 5 per cent iritis (of which 1 per cent is classed as bacterial and 2 5 per cent abacterial)

From Moorfield's, Browning[2] reports "only one case of infection in all the operations where the bacteriological examination has been made and the eye reported suitable for operation, and no case of acute postoperative infection has occurred after cataract extraction" Browning's method of examination is by carefully applying a sterile swab to the conjunctiva of the eye to be examined and with this inoculating human blood agar, incubating twenty-four hours or more and examining stained smear Previously to the adoption of this technic, about 1 per cent of the eyes operated on for cataract at Moorfield's were enucleated because of infection In fact, anything less than 2 per cent of infections has been considered good in the past, but that standard will have to be raised

If dangerous organisms are found, various methods are advised to get rid of them At Prague, according to Kraupa,[3] they use irrigation every half hour with 1 5,000 mercuric oxycyanid and wash out the tear passages daily On the third day another culture is taken (he does not say for how many hours irrigations are omitted before taking this), and if positive, 1 per cent silver nitrate is applied, even if there is no secretion from the conjunctiva Ethylhydrocuprein, 0 5 per cent, is used also in some cases for half hourly irrigation If he has to operate before the sac shows negative cultures, he applies silver nitrate, 1 per cent, two hours before operation and copious irrigation at the time of the operation with oxycyanate, avoids bruising the wound, uses conjunctival flap, and avoids introducing into the eye any instrument which has touched the surface of the eyeball, but he does not think it necessarily an indication for iridectomy He thinks it particularly important to know about the bacterial content of the conjunctival sac in cases of needling or treating prolapsed iris

In Vienna, if the conjunctiva looks unclean and the cultures are positive, the treatment, according to Lindner,[1] is 2 per cent silver nitrate once daily, and he reports great difficulty in getting negative cultures in these cases

At Moorfield's, Browning[2] says no treatment will so surely and quickly render an eye sterile to cultures as mercuric chlorid, and so if a culture is taken less than twelve hours after irrigating with this it is likely to be sterile, though a few hours later, if untreated, it would be positive This is a very important point, and may be the cause of some of the failures by other operators I suppose the reason for this is that the pathogenic bacteria are not only on the surface of the conjunctiva, but also are in the ducts of the glands which abound there The antiseptic solutions do not penetrate into the ducts, and though nearly all those on the surface may be removed or rendered harmless, fresh ones gradually come to the surface from the glands just as happens when we try to sterilize the skin, for example, the hands

Mayou says that over and over again he has found the conjunctiva almost invariably sterile when tested after three days, washing four times a day with perchlorid 1 6,000

It is probable that some of the energetic measures adopted to get rid of the organisms only serve to keep up or set up a conjunctivitis, because they are so strong and irritating One of the advantages of argyrol is that it is not irritating, another is that it penetrates on account of its great specific gravity It seems to me that 25 per cent argyrol instilled every hour, and copious irrigation with a weak mercuric chlorid or oxycyanid solution 1 5,000 twice a day, for half a minute or less, according to the amount of irritation excited, is more likely to be well borne by the conjunctiva We must rely largely on Nature's defenses, and it is unwise to break them down by too vigorous use of powerful antiseptics I should not use silver nitrate if there is no conjunctivitis

In view of the conflicting opinions among the highest authorities, it is not well to be dogmatic, but I venture to make a definite statement as to what seems to me the best procedure in the hope that it will stimulate discussion

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[1] Lindner Arch f Ophth (Graefe's), 1914, lxxxviii, 415

[2] Browning Tr Ophth Soc U Kingdom, 1914, xxxiv, 61

[3] Kraupa Ztschr f Augenh, 1913, xxx, 459

1 A knowledge of the bacterial content of the conjunctival sac is of very great value to an operator, provided it is reliable At present such information is not obtainable anywhere in satisfactory fulness It is not enough to be told that streptococci are present, or even that pneumococci are present There are an unknown but large number of different varieties and types and strains, differing in virulence, differing in the immune reactions they excite, and consequently requiring different defensive antibodies for the patient to combat them with But the fact that perfectly full and reliable information is not available is not a sufficient reason for rejecting the partial information that is within our reach Let us seek for all the information we can get, and keep clearly in mind its limitations It is only a question of time when much fuller information will be obtainable It does not seem unreasonable to prophesy that when the strains of streptococci are differentiated, vaccines and serums will be found far more effective because applied so much more intelligently than at present is possible I would make for my first thesis the assertion that it is desirable to have as full a report as possible on the bacterial content of a conjunctival sac, before undertaking a cataract or similar operation

2 Since our laboratory report is confessedly not to be fully trusted, we must apply the clinical test If the conjunctiva is not healthy looking, operation should be postponed until treatment has made such improvement as is possible in a reasonable time If it is healthy looking and the laboratory report is not unfavorable, the operation may be proceeded with

3 The best treatment for the conjunctiva when not healthy, or when the bacterial report is unfavorable, will vary with the condition and the organism Three aims should be kept in view (*a*) To remove mechanically all bacteria as fast as possible by free drainage and irrigation (*b*) To increase the natural resistance and defensive powers of the eye and body (*c*) To kill or inhibit the growth of the bacteria For *a*, instillation of argyrol 20 to 25 per cent every hour has proved its value, though it is said to have no value as a germicide, so that care should be taken that its solutions are sterile This should be supplemented by copious irrigation twice, or perhaps many more times a day with a mercurial lotion, either mercuric chlorid or cyanid, 1 5,000, but I should not favor the frequent application of strong antiseptics or irritants Yellow mercuric oxid ointment, or other antiseptic ointments are often useful There may be, and probably are, special antiseptics of value against special organisms, as zinc solution against the diplobacilli and ethylhydrocuprein against pneumococci Where the mercurials are irritating and seem to do more harm than good, I like to use a bland, but very cleansing and agreeable lotion containing

	gm or c.c
Boric acid	0 8
Borax	8 8
Ol eucalypt	0 15
Ol gaulther	0 15
Menthol	0 050
Thymol	0 075
Water	1 000

To increase the general and local resistance, attention to the digestive tract and to diet, fresh air (avoiding wind, dust, smoke and strong light) exercise and plenty of sleep should be prescribed In short, eyes and body should be put in the best physical condition possible There is no doubt that in suitable cases vaccines and antiserums are of value, but their limitations are not yet well defined

Lastly, if one is obliged to operate, or chooses to operate in the presence of an unhealthy looking conjunctiva or with positive cultures of dangerous organisms, the most effective plan is that of Herbert as modified by Elliot I am not sure that cotton swabs are the best to aid the irrigation in clearing away the bacteria A smooth glass or metal or rubber instrument may serve the purpose as well, and be less likely to leave lint behind The objects to be gained by the swabbing are removal of mucus, etc, and also by a sort of massage the removal of some of the contents of the conjunctival glands, which might otherwise be made to escape during the operation by the similar massage by the lid elevator or other instruments or fingers

SQUEEZING

Is there anything that can be done to prevent squeezing? Maddox[4] speaks of the dozens of eyes that are spoiled annually in his country, by sudden squeezes which overpower the ordinary speculum The same is true in ours Much thought has been given to this problem, and the chief reliance of ophthalmic surgeons is on one or another method of procedure during operation aimed to control rather than prevent squeezing — special forms of speculum or blepharostat, or special ways of holding them and supplementing them with fingers Of these we need not speak, for they are not a part of preparation of the patient for operation

Van Lint has suggested prevention of squeezing by paralyzing that part of the facial nerve which controls the orbicularis He does this by deep injection into the outer half of the upper and lower lids through one puncture external to the outer canthus The solution is from 3 to 4 c c of 1 per cent novocain with some suprarenin He operates from one-half to one hour after injection How well this succeeds I do not know

Other operators try temporarily to rob the orbicularis of its power for mischief by cutting the muscle or its tendon An incision upward and outward through the muscle above the external lateral ligament will quickly heal while the operative wound in the eye is healing and will leave no noticeable scar One of the chief advantages of this method is the better access gained in case the palpebral fissure is small This cut allows the lids to be more widely opened It should be more often used

Maddox[4] recommends a suture for bad cases to be inserted before the cataract incision is made It passes across the cornea from the insertion of the superior rectus to a point below the cornea This is not preventive of squeezing, but is aimed to hold the wound together when the patient squeezes, being slackened during intervals of comparative calm, to allow the necessary steps to be taken

All these measures, except the last, are aimed to control or prevent squeezing by the orbicularis They take no account of any other method the patient may have of squeezing I believe that the orbicularis is far the most important factor in squeezing, but I am convinced that the external ocular muscles are capable of exerting pressure and do exert pressure if they are caused to contract, and I am not referring now to the

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[4] Maddox Ophth Rev October 1914 xxxi

The petrolatum was easily removed from the anterior chamber by paracentesis. Since that time I have abandoned the use of ointments.

Dr. Walter B. Lancaster, Boston: In regard to the preliminary training of the patient, I think that it is useful in some cases and harmful in others. Like a good many other measures, it ought to be used by individualizing the patients. Some will be made more intractable the more you try to train them. Many patients may seem to be calm and say they have no fear. Often in such cases the pulse is the better guide. Some of the professional anesthetists call attention particularly to this danger with athletes. They need special care in preliminary treatment, and often require sedatives. An important point to observe in the operating room is not to converse. These patients hear and whether they understand correctly or not, put their own construction on what they hear.

THE TRANSPLANTATION OF DUCTLESS GLANDS

WITH REFERENCE TO PERMANENCE AND FUNCTION *

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The transplantation of normal or tumor tissue is at present attracting wide interest among experimental physiologists and pathologists because of the many fundamental biologic problems which earlier work, both with tumor and normal tissue, uncovered. Among these problems probably the two that are being most actively investigated at present are (1) whether specific nerves (either secretory or regulatory) are necessary for the survival, growth and function of transplanted tissues, and (2) the problem of the reaction of the host to transplanted foreign tissues. For this work the so-called endocrine glands have obvious advantages over glands with external secretions, or the various connective tissues and, indeed, over tumor tissue.

In the course of our work during the past three years, we have studied the transplantation of ovary, suprarenal (cortex and medulla), spleen, parathyroid and thyroid of rabbits. Because the thyroid has several great advantages, namely, its accessibility, its wide range of morphologic changes, which are easily interpreted, and its specific iodin reaction, all useful in checking and controlling results, we have devoted more time and effort to the study of this tissue, and the summary to follow is based for the most part on our experiments with the thyroid gland. Our experience has been confined wholly to autotransplantation and homotransplantation, and for the sake of clearness it seems best to present the data under these two divisions rather than according to the tissues used.

AUTOTRANSPLANTATION

We have made nine experiments with ovarian tissue, transplanting in the subcutaneous tissues of the abdomen after removal of both ovaries. In all cases the stroma, interstitial cells and graafian follicles showed survival and growth over periods varying from thirty-four to 219 days. Mature graafian follicles were recovered from two rabbits, associated with active hyperemia of the uterus and the typical phenomena of rut.

A point of practical importance which we have observed in the older transplants is the presence of hemorrhagic cysts, due to the fact that the ripened follicles rupture into themselves instead of onto a free surface as occurs in the normal, and these cysts ultimately produce pressure atrophy of the ovarian tissue. Apart from this complication, our work confirms that of many others that these autotransplants are permanent and show all the evidences of functional activity.

As a part of other experiments, we have made six autotransplantations of spleen tissue in the subcutaneous tissue of the abdomen, all of which were absorbed in twelve days.

Parathyroid tissue has accidentally been transplanted many times with the thyroid, and we have often found active normal looking parathyroid tissue in thyroid transplants when examined microscopically.

In the first 100 rabbits used, thyroid was successfully transplanted into ovary, suprarenal, spleen, jugular vein, muscle, subperitoneal tissues and into the subcutaneous tissues of the neck, chest and abdomen. In the second 100 rabbits, transplantations were made uniformly in the subcutaneous tissue of the abdomen, modified by one or more of the following conditions: with the thyroids intact, partially and completely removed, with and without removal of spleen, suprarenals, ovaries, and testes, with and without the administration of phosphorus, and with and without the administration of iodin using both normal and hyperplastic thyroids. Of these factors, the removal of a large part of the thyroid gland or the administration of iodin materially modifies the growth and activity of the autotransplants.

Autotransplants uniformly "take" and "grow," the amount of growth being determined by the amount of thyroid removed and also by the administration of iodin or desiccated thyroid. Cristiani and von Eiselsberg also observed that removal of the thyroid caused compensatory hyperplasia of transplants irrespective of their location in the body. We can confirm this observation. In every instance, it was found that the histologic condition of the transplant was identical with that of the thyroid gland. Both undergo hyperplasia simultaneously and to the same degree, and both involute simultaneously and to the same degree.[1]

Following the administration of iodin, transplants take up and retain it to the same degree as the thyroid gland. Many authors have stated that transplants of thyroid were permanent. We have observed transplants for more than a year through the phases of spontaneous and induced hyperplasia and involution, and can confirm the statement that they are permanent irrespective of their location.

Inasmuch as such transplanted thyroid tissue undergoes all the morphologic variations associated with growth and function that are observed in nontransplanted thyroid tissue, and inasmuch as transplanted thyroid shows the same reactions with iodin and the same storage of iodin as nontransplanted thyroid, we believe that this is sufficient evidence that such transplants may grow, involute or function equally as well as nontransplanted thyroid. We cannot accept the belief held by some observers that specific nerves, whether secretory or regulatory, are nec-

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* From the Laboratory of Experimental Medicine, Western Reserve University.

* Read before the Section on Pathology and Physiology at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

essary for normal growth or functional activity of the thyroid The evidence obtained from these observations suggests that the thyroid is truly a blood gland in that the stimuli causing either increased or decreased activity may reach it directly by way of the blood stream These conclusions are based on the study of 289 autothyroid transplantations in 141 rabbits observed during periods varying from three to 381 days In forty-one rabbits, only autotransplantations were made, and in 100 both autotransplantations and homotransplantations were made, in thirty-two of this 100, negative homotransplantations had preceded the positive autotransplantations

HOMOTRANSPLANTATION

We have made twenty-six homotransplantations of sexually mature ovarian tissue, all but one of which showed complete absorption of the ovarian structure except for the interstitial and luteal cells The one exception was probably an instance of the failure of the host to react to the foreign tissue in the usual way The fact that the lipoid cells of the ovary can survive upward of 193 days, while the stroma and egg cells undergo absorption in a few weeks, shows that in the lipoid-containing tissue we are dealing with a different order of cells against which the host reacts very slowly, if at all There is evidence from the standpoint of transplantation, as well as from that of embryology and morphology, that the cells of the suprarenal cortex belong to this series also Repeated homotransplantations into the same animal of these lipoid-containing cells of the ovary would probably determine whether or not the host eventually develops a resistance to this tissue also Up to the present we have not made sufficient experiments to determine this point The two important facts observed in this series of homotransplantations of the ovary are that (1) the host reacts in the usual way and usual time to the egg and stroma cells, and (2) the host reacts very feebly to the lipoid containing cells

We have made eighteen homotransplantations of the spleen, all of which were absorbed in twelve days

Homotransplantations of thyroid were made in spleen, bonemarrow, suprarenal, ovary, testes, liver, muscle and subcutaneous tissue of neck and abdomen Purely for the convenience of subsequent examinations, we have used the subcutaneous tissues of the abdomen for all transplants during the past two years

Up to the present we have made 567 homotransplantations in 205 rabbits of various ages In 105 of these only homografts were made As in the case of thyroid autografts, the conditions have been varied as follows with and without removal of the thyroid, ovaries, spleen and testes, with and without administration of iodin and phosphorus, using phosphorized and iodized thyroids separately and together

A tabulation of the results shows that complete absorption may take place as early as the tenth day, and usually occurs before the thirtieth day in cases which have not been previously homotransplanted As is well known, repeated homotransplantation markedly accelerates the destruction of homografts, due to the development of an immunity, the nature of which is little understood On the other hand we have under observation two rabbits containing homotransplants of more than a year's duration, which grossly and microscopically resemble autografts Between these two extremes, there are all gradations in the rate of destruction This to our minds is the most significant fact we have observed, and, in reviewing the literature, we have been unable to find reports dealing specifically with these variations in large series of nontumor transplantations

A thorough understanding of these variations would go far toward explaining the causes of the failure of homotransplantation and, as the students of tumor point out, it is also the most important problem confronting them It seems well established that these variations depend on the development of an immunity to a foreign protein (tissue), and tumor investigators have shown that the degree of foreignness of the tissue used is the most important factor in its development A study of our thyroid material suggests that these variations in the rate of absorption may be due to intrinsic differences in the reaction of the host, quite apart from and in addition to the other important factor of the foreignness of the tissue used In the series of 205 rabbits about 92 per cent destroyed initial homografts in from ten to thirty days, and subsequent homografts, as is well known, were destroyed more rapidly The remaining 8 per cent of the rabbits showed strikingly less rapid reactions even though the same gland was used for the two groups in most instances, and the factor of blood relationship could be considered most remote The following instance, of which there are several others in the series, may be mentioned in some detail in support of the foregoing statement

The thyroid slightly hyperplastic, of Rabbit 233 was transplanted into three rabbits (Rabbits 226 227 and 229), May 8 1915 Within thirty-seven days the transplant in Rabbit 226 was completely absorbed and within ninety days the transplant in Rabbit 227 was absorbed, while the transplant in Rabbit 229 is still large and active after 400 days June 14 1915, the thyroid of Rabbit 263 was also transplanted into Rabbits 226 227 and 229 and in addition, as initial grafts into six other rabbits and as second homografts into four additional rabbits This thyroid (from Rabbit 263) had disappeared from all but one of the thirteen rabbits at the time of the first examination the single exception being Rabbit 229, which still has a homotransplant of 400 days from Rabbit 223 This second positive homograft was removed at the two hundred and forty-third day, and in both gross and microscopic appearances had all the characteristics of an autograft.

These experiments show that one has to deal with variations in the resistance of animals, which is quite independent of the thyroid used It is clear, therefore, that when one finds an animal in which an initial homograft is positive, subsequent homografts from unrelated animals may remain and act as autografts On the other hand, we have never seen a positive homograft following an initial negative homograft, no matter what the age, sex or blood relationship of the rabbits used

Turning now to the second factor in the variations of the rate of absorption, namely, the degree of foreignness of the tissue used, there is evidence that one can modify the rate of absorption by modifying the condition of the host and also the chemistry and physiologic activity of the thyroid used, as is demonstrated in the following experiments

In three rabbits with thyroids intact (Rabbits 237 238 and 239), potassium iodid was given in 20 mg doses for two weeks previous to transplantation These three were then partially thyroidectomized and transplanted on the left side from the thyroid of Rabbit 254 in which marked hyperplasia had been induced by a previous partial thyroidectomy The same hyperplastic thyroid was transplanted into the left side of two other rabbits (Rabbits 255 and 256) which had had similar previous partial thyroidectomies and whose thyroid stumps were hyperplastic The iodized and quiescent thyroid of Rabbit 237 was at the same time transplanted into the right side of all five (Rabbits 237, 238, 239, 225 and 256) Subsequent examination of the thyroid grafts made from the hyperplastic thyroid into both the iodized and noniodized rabbits shows that in the two rabbits (255 and 256) with previous partial thyroidectomies absorption occurred in thirty days, while in the three iodized rabbits (237, 238 and 239) the grafts disappeared in one (Rabbit 237) after fifty days, in the second (Rabbit 239) it was positive and was recovered at necropsy 144 days later and in the third (Rabbit 238), the graft was positive at 149 days but had disappeared at the two hundred and first day

Subsequent examination of the right thyroid grafts made with the iodized thyroid of Rabbit 237 shows that in the noniodized rabbits (255 and 256) absorption occurred in the usual time, while in the two iodized rabbits (238 and 239), this thyroid was removed in one (Rabbit 239) at necropsy 144 days later, and in Rabbit 238 the transplant is still large and active at 382 days and resembles in all respects an autograft

This series of experiments shows clearly that when iodized thyroid is homografted into iodized rabbits, the rate of destruction is markedly decreased As iodin is a physiologic constituent of thyroid, and as these experiments show that its previous administration to both donor and host delays the rapidity of absorption of homografts, it seems certain that it is possible to modify the usual reaction of the host by strictly physiologic means While iodin favorably affects the thyroid, there is no evidence that it has a similar action on other homografted tissues Its influence on the fate of the thyroid homograft suggests, however, that it may be possible to modify the host's reaction to other homografted tissues through one or more of their specific chemical constituents

SUMMARY

Concerning autografts we have been able to confirm the conclusions of others that thyroid when transplanted shows all the evidence of growth, function and permanence, and to the same degree, as does the nontransplanted thyroid This work also shows that specific nerves, whether secretory or regulatory, are not necessary either for the control of growth or of function in the case of the thyroid

Concerning the behavior of thyroid homografts, it seems established that both the host and the tissue used for the grafts modify their duration These two factors may be quite independent, antagonistic to or helpful to each other In the case of the thyroid this reaction may be modified by iodin

Lastly, the future of tissue transplantation as a therapeutic means rests on a solution of the problem of the homograft, and it is also certain that whatever headway is made in overcoming the obstacles to homografting will to an equal degree be applicable to the solution of the tumor problem

ABSTRACT OF DISCUSSION

Dr Robert T Morris, New York In trying to make rabbits immune to each other's serum, I found that apparently these rabbits absorbed the grafts more readily than rabbits not so treated This testimony is negative so far as my intention was concerned, but positive in a way, showing that the serologists, at any rate, have a problem before them Undoubtedly [illegible] making transplants we shall sometimes sensitize In some cases in which we produce allergic phenomena with our transplants, we shall be enabled to work out further treatment on the basis of the degree and effect of the allergic response

Sometimes a graft may not serve as a graft, but may have other functions A patient had lost both his testicles as the result of mumps I grafted a testicle from another man The testicle which I grafted gradually underwent absorption, but what happened was this that graft stimulated the energy of the testicle that had been formed, and that young man now has a testicle one-third the normal size on that side, with full semiesthesia We have an unlimited field Supposing, for instance, that we might in the case of tuberculosis of the suprarenal glands transplant a normal suprarenal gland I have done it, have folded it into the omentum It takes kindly, and we may then relieve the work on the suprarenal gland, in such a way that even though the graft undergoes absorption, we may obtain some control over the tuberculosis by strengthening the part, and then increasing this patient's general resistance

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AMINO ACID NITROGEN IN THE SYSTEMIC BLOOD OF CHILDREN IN HEALTH AND DISEASE *

C J V PETTIBONE, Ph D
and
F W SCHLUTZ, M D
MINNEAPOLIS

The recent trend of investigation in the field of metabolism has served to demonstrate the importance of the amino acids in the metabolism of the proteins As was shown by Folin and Denis[1] and Van Slyke and Meyer,[2] amino acids are present normally in the blood Final proof of this fact was furnished by Abderhalden,[3] who succeeded in isolating and identifying several of this group of compounds from large amounts of blood, and by Abel, Rowntree and Turner,[4] who obtained considerable quantities of amino acids from blood by their ingenious method of vividiffusion From these and other observations the conclusion has been drawn that the digested proteins of the food are absorbed as amino acids and as such are transported to the tissues

The amounts of amino acid nitrogen in the blood of different normal individuals or even of the same individual at different times have been shown by Van Slyke and Meyer[2] to vary widely, the amounts given by these authors ranging from 4 5 to 8 5 mg nitrogen per hundred c c of blood Numerous reports have been made of variations in the total nonprotein nitrogen of the blood in disease, and in urea nitrogen, which is the largest factor of the nonprotein nitrogen, but only isolated attempts have been made to discover whether or not the amino acids in the blood were subject to characteristic variations in pathologic conditions, and these with but indifferent success

Segale[5] reports an increase of amino acids in the serum in anaphylaxis Kaplan[6] and later Kaplan and McClelland,[7] have reported that in syphilis the amino acid nitrogen in the blood is habitually low, but Ellis,

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* Read before the Section on Diseases of Children at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916

* From the Department of Physiology and the Department of Pediatrics of the University of Minnesota Medical School and the Minneapolis City Hospital

[1] Folin and Denis Jour Biol Chem, 1912, xi, 87

[2] Van Slyke and Meyer Jour Biol Chem, 1912, xii 399

[3] Abderhalden Ztschr f physiol Chem, 1913, lxxxviii, 480

[4] Abel, Rowntree and Turner Jour Pharmacol and Exper Therap, 1913 1914, v, 275

[5] Segale Zentralbl f Biochem u Bioph, 1913, xv 269

[6] Kaplan New York Med Jour, 1913, xcvii, 1172, ibid, 1913, xcviii, 157

[7] Kaplan and McClelland New York Med Jour, 1913, xcviii, 157

Cullen and Van Slyke[8] failed to confirm their results Rabinovitch[9] reports extremely high amounts in the umbilical cord, 37 mg per hundred c c in the fetal portion, and 137 in the maternal portion

Foster,[10] in studying uremia, although observing considerable variations in total nonprotein nitrogen and urea, reports that the amounts of amino acids remained normal Gyorgy[11] observed an increase after bleeding The reports of amino acid content of the blood in pathologic conditions are, however, very meager In continuation of the work which we have reported[12] on the amino acid content of the blood of normal infants, which was found to average about 4 mg of amino nitrogen per hundred c c of blood, it was decided to extend the observations to pathologic cases in order to determine whether or not there were any marked or characteristic departure from the normal The discovery of such a characteristic variation might be of considerable diagnostic value, or even throw light on the etiology of the disease

Observations were made on the amino acid content of the blood of somewhat over sixty children ranging in age from 1 month to 13 years Of these, ten were normal healthy subjects The remainder were suffering from various disorders as follows scarlet fever, 6, diphtheria, 5, bronchial or lobar pneumonia with complications, 5, syphilis, 4, underfeeding with complications, 4, tuberculosis, 3, exudative diathesis, 3, atrophy, 3, nervous disorder, chorea and spasmophilia, 3, measles, 2, nephritis, acute and chronic, 2, rachitis accompanied by varicella and abscess, 2, alimentary disturbances, acute and chronic, 2, and 1 case each of encephalitis, otitis media, Mongolian idiocy, tonsillitis, and ichthyosis

The blood was drawn by hypodermic from the median basilic vein of the arm, or by Tobler's method from the superior longitudinal sinus, and immediately taken to the laboratory for analysis The analysis was made by the method of Van Slyke and Meyer[2] As the amounts of blood obtainable were often small, it was possible to make only about half of the determinations in duplicate The quantities of blood used in each analysis ranged from 2 to 5 c c In one case (Case 34, pneumonia), however, only 1 c c of blood was used Since the amounts of urea and ammonia in the blood are very small (the analysis was begun within one-half hour after taking the sample), correction for these two substances was made as suggested by Van Slyke and Meyer[2] by allowing the deamination process to run for a second period equal in length to the time for decomposing the amino acids, and subtracting the volume of nitrogen produced in this second period from that obtained in the first period The figures reported in the accompanying table represent milligrams of nitrogen per hundred c c of blood

It will be observed that the figures for normal children, as well as for those suffering from the wide variety of disorders observed, run on the whole somewhat lower than the average values reported by Van Slyke and Meyer for adults In observing the figures classified according to disease, there appears to be no consistent or characteristic variation from the average values observed in health This is also true for high temperatures, those subjects suffering from a fever around 104 showing no consistent increase in amino acid nitrogen over the normal, as might have been expected from the increased destruction of tissue protein, although this fact might be accounted for by a corresponding increase in the destruction of the amino acids which were produced by protein hydrolysis

As was the case in our observations on infants,[12] there appears to be no striking correlation between the amount of amino acid nitrogen in the systemic blood of children and the time which had elapsed since feeding, the values obtained after from fifteen to twenty-four hours of fasting not differing consistently from those obtained from children which had been fed four, five or six hours previous to the taking of the sample

OBSERVATIONS ON THE AMINO ACID CONTENT OF THE BLOOD IN CHILDREN

Case No	Age	Condition	Time after Feeding	Temp	Nitrogen per 100 C c of Blood Mm
40	10 mos	Normal	4 hrs		4 59
32	10 mos	Normal	7 hrs		4 46
33	13 mos	Normal	7 hrs		2 37
35	5 mos	Normal	6 hrs		3 28
36	2 mos	Normal	6 hrs		2 05
49	8 yrs	Normal	8 hrs		3 86
50	8 yrs	Normal	8 hrs		3 71
21	5 mos	Normal	4 hrs		3 18
22	7 mos	Normal	4 hrs		3 44
59	6 yrs	Normal	12 hrs		6 97
23	9 yrs	Scarlet fever (convalescence)	5 hrs		3 41
24	8 yrs	Scarlet fever (3 days)	6 hrs	102 5	3 74
48	5 yrs	Scarlet fever (5 days)	5 hrs	100	4 97
52	7 yrs	Scarlet fever (2 days)	12 hrs	103 5	4 41
53	7 yrs	Scarlet fever (3 days)	12 hrs	103 8	2 37
14	9 yrs	Scarlet fever (2 days)	12 hrs	103	5 48
34	13 mos	Bronchopneumonia and rachitis	24 hrs	103 6	1 80
25	5 yrs	Lobar pneumonia and empyema	6 hrs	102	3 77
3	6 yrs	Lobar pneumonia following measles	48 hrs	104	3 74
18	6 yrs	Lobar pneumonia (convalescence)	15 hrs		3 52
38	2 yrs	Diphtheria (nasal and faucial)	12 hrs	102	1 56
39	3 yrs	Diphtheria (nasal and faucial)	12 hrs	103	3 22
44	3 yrs	Diphtheria (laryngeal)	4 hrs	103 6	2 01
5	13 yrs	Diphtheria (faucial)	24 hrs	103	3 45
15	4 yrs	10 days (convalescent typhoid)	4 hrs		3 32
51	9½ mos	Syphilis	4 hrs		5 10
6	1 mo	Syphilis	4 hrs	99	3 94
7	2 yrs	Syphilis	6 hrs		5 0
8	18 mos	Syphilis	7 hrs		5 0
43	10 yrs	Chorea and spasmophilia	4 hrs		3 27
17	12 yrs	Chorea (convalescent)	15 hrs		3 91
61	9 yrs	Spasmophilia	12 hrs		4 16
12	3 yrs	Tuberculosis (incipient)	5 hrs		5 0
16	12 yrs	Tuberculosis (gland and Pott s)	15 hrs		4 0
19	7 mos	Meningitis and pertussis	6 hrs		2 72
29	5 mos	Exudative diathesis	4 hrs		3 60
41	2 mos	Exudative diathesis eczema	4 hrs		2 44
57	18 mos	Exudative diathesis	4 hrs		8 48
37	2 mos	Atrophy	6 hrs		2 46
20	1 yr	Atrophy	4 hrs		5 67
58	2 mos	Atrophy	4 hrs		6 2
27	4 wks	Underfeeding	4 hrs		5 2
28	3 mos	Underfeeding	24 hrs		3 21
46	2 yrs	Underfeeding	5 hrs		5 74
55	5 mos	Underfeeding	4 hrs		4 52
9	5 mos	Enteritis (bloody stools)	24 hrs	100	3 42
10	11 mos	Chronic alimentary disturbance and rachitis	6 hrs		2 98
56	3 yrs	Rachitis and varicella	4 hrs	101	2 95
47	3 yrs	Nephritis (chronic)	24 hrs		1 24
1	7 mos	Nephritis (acute)	24 hrs	101	4 44
31	4 wks	Measles	4 hrs	100	2 77
45	4 yrs	Measles	4 hrs	103	3 45
11	5 mos	Otitis media and atrophy	6 hrs	101	3 87
26	3 mos	Mongolian idiocy	4 hrs		5 10
42	7½ yr	Ichthyosis	6 hrs		4 20
40	7 yrs	Tonsillitis	12 hrs	100	1 22
13	1 yr	Encephalitis	9 hrs	99	6 27

SUMMARY

Although the amounts of amino acid nitrogen in the blood of children appear to be somewhat lower than the accepted values for adults, we were unable to detect any consistent or characteristic variations of amount in the specific diseases examined, and neither marked increase nor decrease in fever

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[8] Ellis A W M Cullen G E and Van Slyke D D The Amino Acid Content of the Blood and Spinal Fluid of Syphilitic and Nonsyphilitic Individuals The Journal A M A Jan 9 1915 p 126

[9] Rabinovitch Compt rend Soc de biol 1914 lxxvi 457

[10] Foster N B Uremia III The Nonprotein Nitrogen of Blood Arch Int Med March 1915 p 356

[11] Gyorgy Compt rend Soc de biol 1914 lxxvi 437

[12] Schlutz F W and Pettibone C J V Quantitative Determinations of Nonprotein Nitrogen in the Blood of the New Born Am. Jour Dis. Child., September 1915 p 206

STRABISMUS PRODUCED BY OPERATIONS FOR STRABISMUS

A CONSIDERATION OF CAUSES PRODUCING DEFORMITIES FOLLOWING STRABISMUS OPERATIONS, WITH SUGGESTIONS FOR CORRECTIVE OPERATIVE PROCEDURES *

FRANK C TODD, MD
MINNEAPOLIS

Cases of strabismus which have been produced by operations performed to correct strabismus or heterophoria are not uncommon Perhaps it would be better to call such conditions deformities In these cases, one or more operations may have been performed They may be classified under four heads

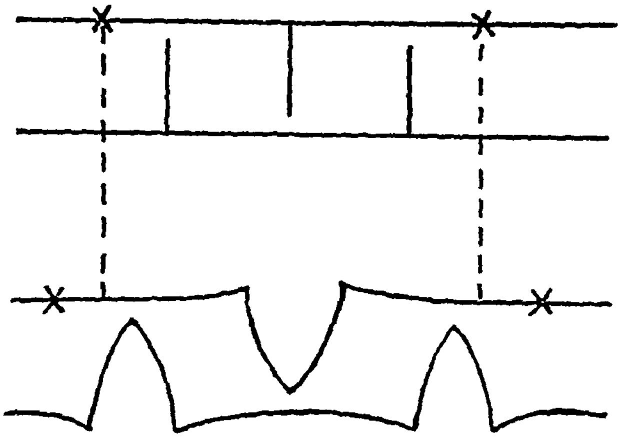

Fig 1—Diagram of author's method of limited tenotomy The change in location of the crosses shows the lengthening which takes place

1 Cases in which operations have failed fully to correct the strabismus, that is, wherein the strabismus remains, is undercorrected, or is increased

2 Cases in which an overcorrection has occurred and strabismus of the opposite kind, though in the same plane, exists

3 Cases in which strabismus in a different plane has resulted, usually combined with one of the failures classified above

4 Exophthalmos or enophthalmos

CAUSES

In general, it may be said that few failures would result if all cases were thoroughly studied and the indications for operations more carefully considered The length of this paper does not permit of a discussion of these questions, but they involve these very definite considerations

1 Should any operation be performed?

2 At what age should operation in the case under consideration be undertaken?

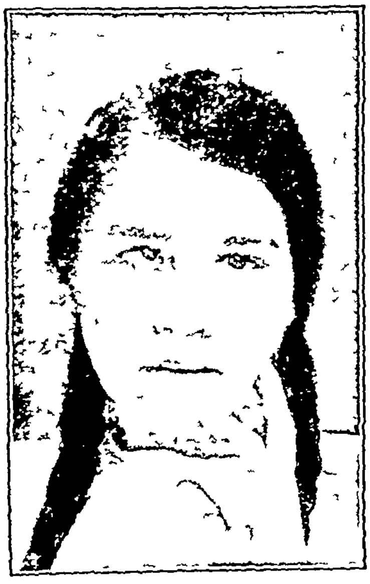

Fig 2 (Case 1)—Before operation, looking straight ahead

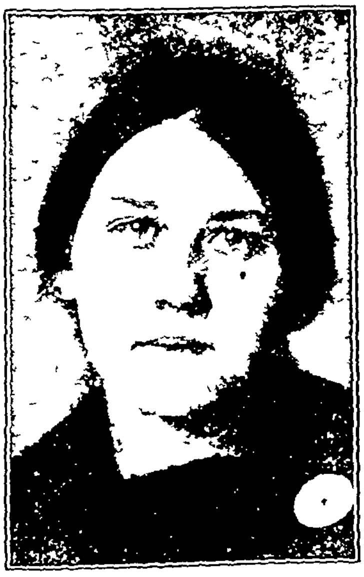

Fig 3 (Case 1)—After operation, looking straight ahead

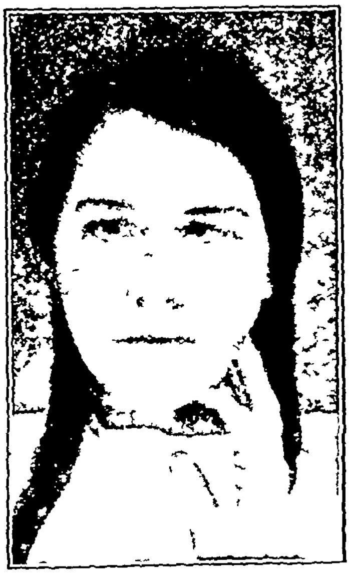

Fig 4 (Case 1)—Before operation, extreme rotation to right

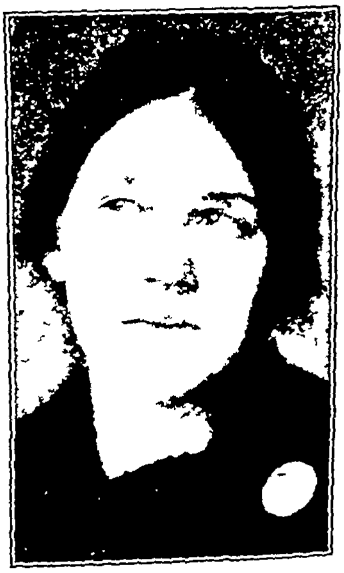

Fig 5 (Case 1)—After operation, extreme rotation to right

3 What muscle or muscles should be operated on?

4 What method of operation should be practiced?

5 What treatment should be given subsequent to operation?

Class 1 *Incomplete results may be caused by insufficient tenotomy* While it is never best to sever a tendon completely, it is necessary to cut all of the tendon fibers in one place or another in order to secure any relaxation, and if any fibers remain, failure to secure the desired effect will exist In the operation of limited tenotomy in which the tendon fibers have been cut in one place or another (as shown in Figure 1) and relaxation does not occur, it is due to the fact that there are some uncut fibers on one or both sides, and these should be engaged in the hook and severed

A tenotomy may be insufficient and an advancement operation may be required in addition

Cicatricial contraction following tenotomy of any kind may result in a reduction of the effect at first produced by the tenotomy This may be prevented or minimized by making the conjunctival incision parallel to and at one edge of the tendon so that the cut edges of the conjunctiva may not come in contact with the cut tendon

Another very frequent cause of failure to secure the desired effect is through the performance of an *improper advancement operation* It sometimes happens that sutures in an advancement operation may cut through the tendon of the muscle It is very easy for this to occur if the sutures are merely inserted into the tendon, as they naturally pull in the direction of the fibers and cut through In order to prevent this catastrophe, it is necessary to ligate the tendon in one manner or another And again, the suture may cut through the sclerotic coat This may be obviated if the suture is placed near the margin of the cornea and is well engaged in the sclerotic coat at right angles to the line of traction that it exerts The force is thereby divided Strong silk thread should be used In case the suture cuts through the tendon or the sclerotic coat and the tendon has been severed, it may become completely lost, so that the effect of a tenotomy is produced, thereby increasing the degree of the strabismus already existing Most forms of advancement operations do not permit of regulation, and the operator makes a guess as to the amount of effect that he will secure from his advancement operation In other words, the results are governed by fate There are now several operations which may be performed which will enable the operator to regulate the effect to some degree, and one of these methods should be selected

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June, 1916

Herein lies the advantages of a tucking operation If the sutures slip or cut through, the tendon is not lost, but if properly inserted, they will not cut through or slip The operation of tucking which I have described[1] not only holds the tendon firmly, but also permits of great advancement and of careful adjustment, and for these reasons seems to me to have distinct advantages as an advancement operation in squint

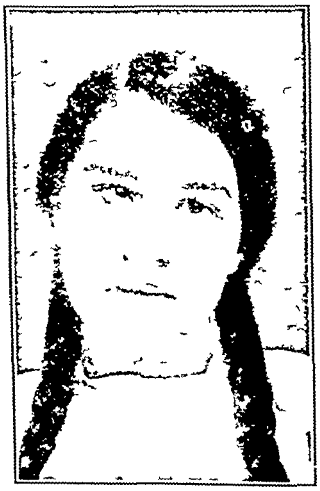
Fig 6 (Case 1) —Before operation extreme rotation to left

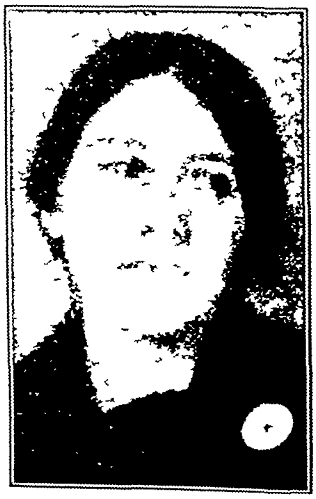
Fig 7 (Case 1) —After operation extreme rotation to left

Class 2 These cases are also not uncommon They occur very often as a consequence of the *performance of complete tenotomy on one or both external recti for convergent strabismus, bringing on a subsequent divergent strabismus* Most of these patients have been operated on early in life, and are cases in which no operation should have been performed Sometimes they are cases in which the wearing of glasses would have resulted in an eventual cure or in which the strabismus might have corrected itself at a later age Some of them, however, are produced by operations in later life

In these cases complete tenotomy has been performed on one or both muscles *Rarely an advancement operation has been done in addition to the tenotomy*, but this is not commonly the case because the advancement operation seems to be avoided because of its greater difficulties

The prevention of deformities of this class is thus apparent

If an operator finds a greater effect than he desires to produce after tenotomy, either at the time of operation or a few days later, he should endeavor to recover the tendon and stitch it forward on the globe If his advancement operation is too great, then he should be able to relax the tension, and if adhesions have already formed, the tendon should be hooked up and the eye forced toward the opposite side, thereby stretching or breaking the adhesions sufficient to secure the desired effect

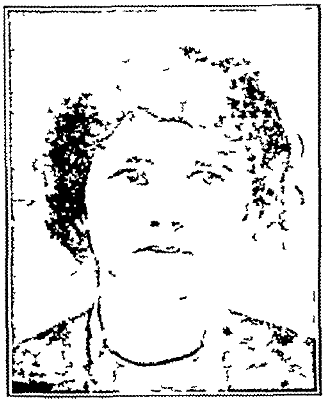
Fig 8 (Case 2) —Before operation looking straight ahead

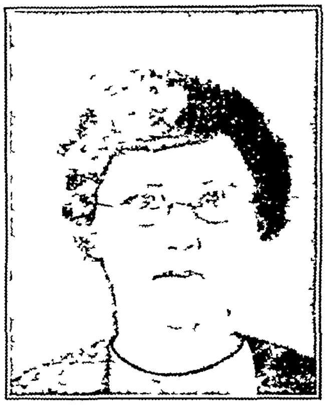
Fig 9 (Case 2) —After operation looking straight ahead

Rarely should a tenotomy be performed on young children, never until all other measures have failed after a long period of effort, never when any improvement is occurring as a consequence of wearing glasses, however slow the improvement, and never unless the case has been carefully studied and the proper operative procedure selected It is impossible to tell what the conditions are going to be at a later period of life, and the chances of producing an ultimate greater and far more severe deformity (one which is still more difficult to correct) are more than even It seems to be agreed that single binocular vision cannot be brought about after an early age Tests and practice with the amblyscope may enable us to determine whether or not such a prospect exists, and it may be wise in some cases to operate early if we feel that such operation may facilitate the production of fusion I am sure from my experience, however, that it is sometimes possible to produce fusion and even stereoscopic vision in later life I think the production of fusion and perspective are often facilitated by

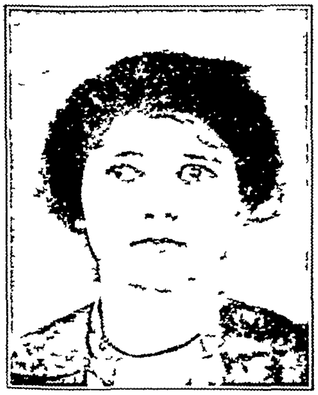
Fig 10 (Case 2) —Before operation extreme rotation to right

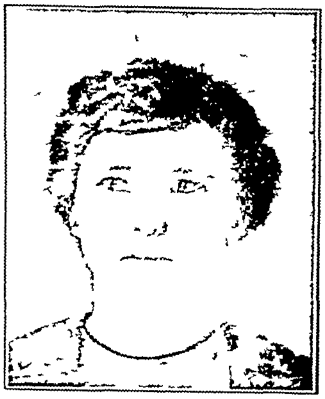
Fig 11 (Case 2) —After operation extreme rotation to right

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[1] Todd F C Extra Ocular Tendon Lengthening and Shortening Operations Which Enable the Operator to Regulate the Effect Ophth Rec December 1914

accurate superimposition of the images, and that therefore it is important to secure an accurate correction when an operation is undertaken If we are simply to secure a cosmetic result, I can see no reason why the operation should be performed until the patient has reached an age when local anesthesia may be used In any event, if a tenotomy is to be performed, it should not be free and complete because the tendon may not become reattached to the sclerotic coat The sclerotic coat is shiny and smooth, and unless denuded by trauma or in some other manner, the tendon will not reattach itself to the globe A complete and free tenotomy is never necessary, for by cutting the tendon on either side in three places, it is possible to produce just as much effect as may be produced by complete tenotomy (Fig 1)

Class 3 *If a complete and free tenotomy is performed, the tendon may fall back and reattach itself further up or down than was formerly the case, thus producing a complex strabismus involving a different plane Advancement operations involving the severing of the tendon, which is then sutured to the globe, may alter the plane of action* Herein again lies the advantage of the tucking operation

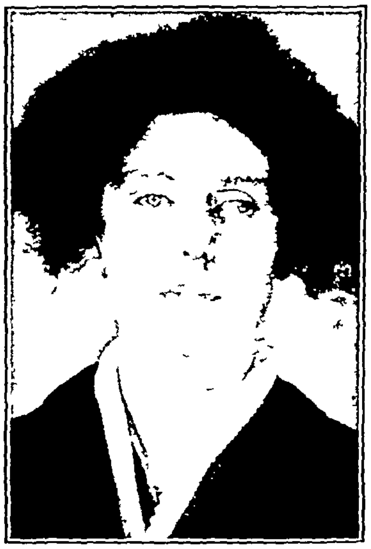

Fig 12 (Case 3) —Before operation, looking straight ahead

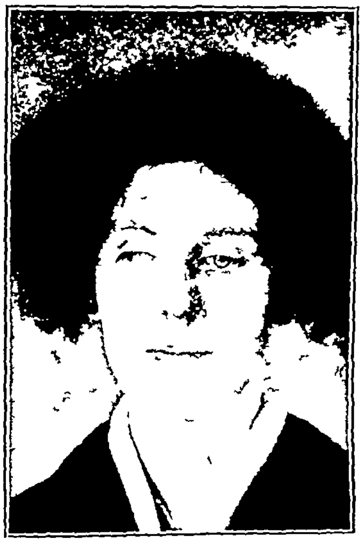

Fig 13 (Case 3) —Before operation, extreme rotation to right

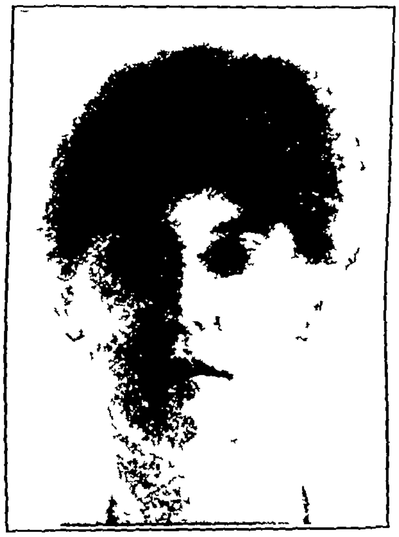

Fig 14 (Case 3) —After operation, looking straight ahead

Class 4 This class does not need much consideration Exophthalmos may be produced by performing a tenotomy on two opposite muscles This sometimes occurs when an operator seeks to correct an overcorrected strabismus which has been produced by a tenotomy Exophthalmos thus produced by too extensive tenotomy may be improved by advancing the tenotomized muscles Similarly enophthalmos might possibly be produced by too extensive advancement not accompanied by tenotomy

THE CORRECTION OF DEFORMITIES

It is impossible to lay down any specific rules as to the correction of deformities produced by operations intended to cure strabismus, for, like plastic operations, each one is, to a certain extent, a law unto itself

As a general rule, it is better to work on the muscle which has become wrongly attached, as where an internal rectus has been tenotomized, giving rise to a divergent strabismus, an effort should be made to find the internal rectus tendon and bring it farther forward on the globe In this instance I find that the tendon tucker is of great service, as it is difficult otherwise to secure sufficient hold on the tendon With the instrument, the tendon may be forcibly brought forward and reattached It may be necessary in order to relax the tension to do a limited tenotomy on the opposite muscle *It sometimes happens that the tenotomized muscle cannot be found, for it has not become reattached to the sclerotic coat* It is reasonable to believe that such a muscle has still some power, for the tendon is engaged in the capsule of Tenon and is prevented from slipping way back into the orbit by the check ligaments, and this opinion is confirmed by the results that I have had in advancing a mass of capsule In those cases there has been secured sufficient power of rotation in the direction of the advancement to lead me to believe that the lost muscle has again become active

Following is a description of the author's method of performing a capsular advancement operation where the tendon of the muscle cannot be found after it has been tenotomized

An incision is made about a quarter of an inch from the margin of the cornea concentric with the margin It having been found that the tendon is not attached to the globe, the mass of capsule is engaged in a pair of broad fixation forceps, this mass being grasped well back and from the scleral surface of the capsule The mass of capsule thus engaged is now twisted once around to give it body It is now engaged with two sutures applied from within out, which are inserted deeply into the tissues Each of the sutures is now inserted into the episcleral tissues near the margin of the cornea at right angles to the tendon The under surface of the capsule that is to come in contact with the eyeball is slightly scarified, and the sutures tied The effect is regulated by the distance backward that the sutures are engaged in the capsule and by the tenseness of the knot

This operation was performed in Cases 3 and 4 (illustrated in Figures 12 to 18), and it may readily be seen what a tremendous benefit resulted from the operation Rotation in the direction of the advancement thus made was very good, though, of course not complete In both of these cases it was necessary to do a limited tenotomy on the opposite tendon, but the tenotomy in neither instance was sufficient to correct the defect The further advantage of the advancement combined with the tenotomy is that whatever effect is secured by the tenotomy is thereby made permanent

In case a deviation has been produced in a different plane, it will be found that the muscle which has been tenotomized has become reattached further up or down on the globe, giving rise to a deviation in the opposite direction from the place the tendon is attached, as was the case in Case 1 (Figs 2 to 7), and it will be necessary to sever that portion of the attachment which is misplaced The tendon then should be tucked and the portion that is folded reattached in the correct location on the globe, care being taken in the tying of the sutures so to regulate the effect as to correct the strabismus in the various planes Here, too, it may be necessary to obtain a relaxation of the opposite muscle by the performance of a limited tenotomy

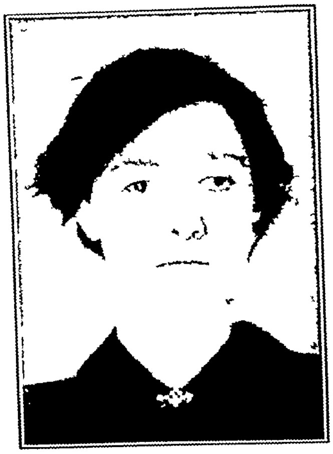

Fig 15 (Case 4)—Before operation looking straight ahead

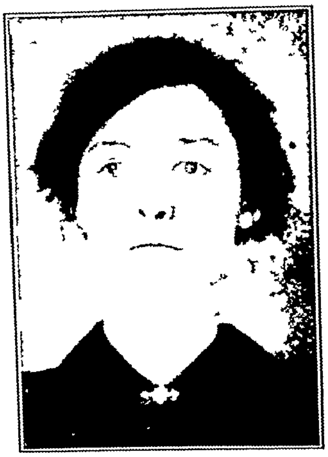

Fig 16 (Case 4)—Before operation extreme rotation to right

ILLUSTRATIVE CASES

Case 1 (Figs 2 to 7)—*Alternating convergent strabismus since infancy*—A G, woman aged 19 Right eye converges 30 degrees when she fixes with the left eye Left eye converges 20 degrees when she fixes with the right eye Upward rotation of either eye when fixing with the other eye

EXAMINATION

Homatropin Test	Versions	In	Out	Up	Down
R + 50 ax 75	R	80	40	40	50
L + 50 ax 105	L	70	40	50	60

Patient has had three operations, probably tenotomies of the internal recti and advancement of the left external rectus

Operation—Limited tenotomy of the internal rectus of the right eye and tucking of the external rectus, right eye The attachment of the internal rectus was found to extend low down on the eyeball, accounting for the upward rotations Severing of the lower portion of the attachment near the eyeball permitted the eye to drop to its normal position

Final Results—Cosmetic result shown by pictures Rotations in various directions practically normal

Case 2 (Figs 8 to 11)—*Divergent strabismus of left eye 35 degrees*—E L, woman, aged 19 The trouble came on one month after operation for convergent strabismus at 5 years of age (probably tenotomy left internal rectus)

EXAMINATION

Homatropin Test	Versions	In	Out	Up	Down
R $^{6}_{5}$ + 1 25 ⊃ + 1 00 ax 95	R	45	60	40	60
L $^{6}_{30}$ + 50 ⊃ + 2 75 ax 125	L	5	80	40	40

Left eye can turn only 5 degrees to the right.

Operation—Under local anesthesia, a few fibers, evidently from the tendon of the internal rectus, were found attached well back to the globe A tucking operation was performed including a large mass of capsule to add strength A limited tenotomy was performed on the left externus Ten degrees overcorrection were produced to allow for stretching, and later regulation

Final Results—Result good, as shown by the illustrations Rotation inward 35 degrees

Case 3 (Figs 12 to 14)—*Divergent strabismus 40 degrees* (Figs 12 and 13)—K K, woman, aged 27 Convergent squint developed at about 2 years of age Wore no glasses Was operated on some time between 6 and 10 years of age under general anesthesia Patient does not know whether one or both eyes were operated on Never had diplopia

EXAMINATION

Homatropin Test	Versions	In	Out	Up	Down
R $^{9}_{0}$ w + 3 00 ⊃ + 2 75 ax 85	R	45	55	48	50
L $^{9}_{0}$ w + 2 75 ⊃ + 4 75 ax 85	L	10	70	40	45

It will be observed that rotations inward of left eye are only 10 This left internal rectus was severed Probably no operation was performed on the right eye

Operation—Under local anesthesia (left eye) There is no internal rectus attached to the sclerotic coat, which accounts for the inability to rotate the eye inward Limited tenotomy, three incisions (of external rectus) For advancement since no internal rectus tendon cou'd be found, the capsule of Tenon was sutured to the sclerotic coat, as described elsewhere in this paper Slight overcorrection was produced

Final Result—Final cosmetic result good, as shown Inward rotation power left eye, 35 degrees When patient fixes with the right eye the left eye is parallel The patient can, but does not select the left eye for fixing, but if she fixes with the left eye the right eye immediately diverges Eyes remain straight because it is natural to use the right eye

Case 4 (Figs 15 to 18)—*Divergent strabismus of left eye 40 degrees*—R P, woman, aged 18 There is some question whether this patient originally had convergent or divergent squint, but I believe it was originally a case of convergent strabismus despite the patient's statement It was first noticed six weeks after birth Patient has had left eye operated on three different times First two operations in childhood and the last one three months ago All these operations were on the left eye

EXAMINATION

Homatropin Test	Versions	In	Out	Up	Down
R — 1 00 ⊃ + 3 50 ax 45	R	55	45	40	55
L + 2 25 ax 45	L	15	60	45	60

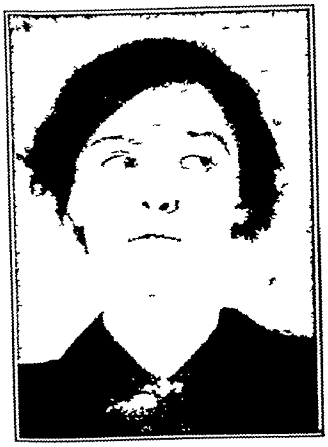

Fig 17 (Case 4)—Before operation extreme rotation to left

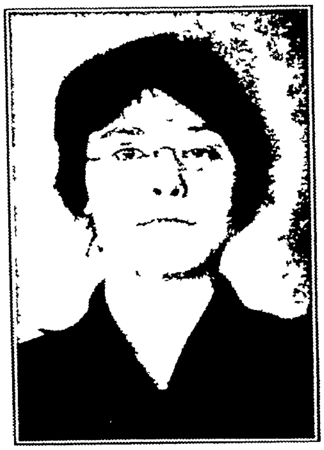

Fig 18 (Case 4)—After operation looking straight ahead

It will be observed from the illustrations and tropometer findings that the patient could turn the left eye to only a limited extent

Operation—On exposing the left external rectus, it was found that it had been previously cut, probably tenotomized It was attached to the sclera over a considerable area and in a mass of scar tissue A limited tenotomy was performed (left eye) An incision was made in the conjunctiva, and after it the usual attempt to find the internal rectus No internal rectus was present A capsule advancement, as described elsewhere in this paper, was performed, attaching the capsule to the eyeball Five degrees overcorrection were produced

Final Result—The illustrations show that the cosmetic result was good, and that rotation was very satisfactory in all directions Tropometer measurements taken fifteen days after the operation on the left eye showed the following

	In	Out	Up	Down
L	50	40	40	50

It will be seen that there was an inward rotation of 50 degrees against a former rotation of 15 degrees

506 Donaldson Building

A NEW SHORTENING TECHNIC

WITH REPORT OF FORTY-TWO OPERATIONS *

RODERIC O'CONNOR, M D
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OAKLAND, CALIF

The basis of my claim as to the value of my operation is that it puts into the hands of the profession a method whereby the average oculist can get consistently good results (functional as well as cosmetic) if he will but study the theory of muscle work in order that he may be able to determine, in any given case, the proper muscle on which to operate

If this claim is correct, and I hope to prove such to be the case, it necessarily follows that the vast number of cases, heretofore treated by temporizing measures, can be cured, and thus much time and suffering can be saved The value of the method is therefore incalculable to that large class of people who have no access to those ophthalmologists who, by extended experience, are able to get good results from operations that are mechanically and surgically wrong in principle

I feel that the foregoing statements are true because my results have been so consistently good — this in spite of the fact that my opportunities have been far less than those of even the average oculist Therefore, I have to give credit to the method alone and not to any special abilities resulting from long experience in muscle work I have been aided, of course, by my interest in and study of the muscle question so far as it has taught me to locate the muscle on which to operate Any oculist can do the same and should, therefore, be able to equal my results

I do not believe that the study of the extra-ocular muscle balance presents anything especially difficult, and do believe that the following are some of the causes which have operated to favor that idea

1 A lack of agreement as to the cause of these imbalances, from which there naturally follows a lack of agreement as to the treatment I myself favor the theory that the prime underlying cause is anatomic, consisting in anomalous development of the muscles which may show as either a defect in power to move the eye or as an excess in power

2 The vogue of tenotomy, which, when complete often made matters worse, and when of the partial variety often required repeated operations with failure at the end The indications for tenotomy are rare, and in my opinion it should be done on the lateral muscles as the primary operation only in cases of moderate exophoria when combined with good convergence

3 The uncertainty of results from shortenings and advancements except in the hands of those few who are qualified by long practice and special experience

4 The reservation of operation to a place of last resort, thus prolonging suffering and possibly decreasing the chance of a good result from an operation too long delayed

Therefore, in my opinion, it has not been the difficulty of the study so much as the frequency of poor results from operations, mechanically incorrect in principle, that has kept the profession, as a whole, from doing good muscle work

It is also my opinion that the time is not far distant when operative muscle work will not be done "as a last resort" but will be done, like other operative work, on clear indications and at the earliest practicable moment Nose and throat work when through many years during which most of the work was of a temporizing nature (like the average handling of muscle cases), till now it is recognized as an operative specialty, and the one who follows the older methods is put down as a "putterer"

SURGICAL PRINCIPLES

The avoidance of constriction of tissues by sutures and of tension on sutures are such well established surgical principles as to need no more than mere mention The advantages of my shortening method all flow from the fact that neither of these are violated, in this respect being the only method which does not violate them

In suturing tendons of muscles that move the extremities, tension can usually be avoided by properly positioning the part so as completely to relax the muscle whose tendon is sutured, and maintaining this position by splints during the healing period

In suturing tendons of the ocular muscles this cannot be done, and so constriction and tension have been considered as necessary evils In order, therefore, to lessen the unavoidable loss in effect following advancements, much time and thought have been given to securing firm anchorages for the sutures so as to hold the tendon forward as long as possible and thus give time for union to occur Also the necessity for marked overcorrection has been emphasized in order to increase the chances of the final union occurring at approximately the point desired This, in itself, was a cause of trouble, as it greatly increased the tension on the sutures unless the opponent was cut

Binocular bandaging, as the closest approach to splinting possible, was advised, and Worth considers ten days in bed with both eyes bandaged necessary to insure a good result

All these difficulties are enough to make the occasional operator (not to speak of his victims) hesitate, and have served to make tenotomy the operation usually done, although, in my opinion, it is seldom properly indicated

The mechanical factors that operate against successful results in advancements are

1 Constriction of tissues by sutures or ligatures

2 Tension on point of union by the operated muscle and its opponent

3 The anatomic formation of the tendons with their parallel fibers but loosely held together

4 Stretching of the operated muscle, causing paresis

5 Retraction of the globe into the orbit

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June, 1916

Constriction of itself, even though there be no tension, is sufficient to produce sloughing of the constricted tissues This sloughing produces a loosening which in turn permits the tendon to slip back through the now loose suture loop These sequelae are increased by the tension of the operated muscle and its opponent through their tone when at rest and their contraction when in action

Paresis from stretching should be only temporary, and this may explain those of my cases in which the immediate effect was apparently insufficient and yet the final was full

Retraction into the orbit I believe does occur and especially in shortenings of the interni My results in such cases have been much less in operating on the interni than the externi, even though the actual amount of shortening of the tendon itself be the same My case reports show this My idea of the explanation will appear later when considering Landoldt's statement that a permanent overcorrection from advancing an internus is impossible

Overcorrection, in my opinion, should never be necessary with an operation correct in principle, unless to allow for retraction into the orbit This has turned out to be true with my method, for in all my cases of esotropia, since I have learned the importance of a wide band, the effect has actually increased during the healing process, even though both eyes be left unbandaged for use in the ordinary occupation of the patient Figuring from the circumference of the globe, we know that the contraction of a muscle equal to 1 mm, *with the attendant relaxation of its opponent,* will rotate the eye through an arc of 5 degrees The normal inward rotation (55) plus the normal outward rotation (45) makes a total arc of about 100 degrees This means that each horizontal rectus varies its total length about 20 mm from extreme contraction to extreme relaxation

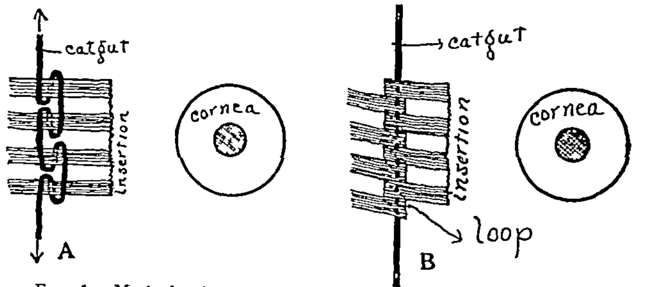

Fig 1 —Method of placing gut and appearance after looping is complete.

The points of this observation are

1 In the primary position there must be considerable tone in the muscles

2 In cases of concomitant squint, in which the actual rotations are not far from normal, there should be no call for tenotomy to aid an advancement, if the advancement be correct in principle, for by our rotation measurements we have proved the ability of the opponent to relax far beyond the point at which we wish to place the deviating eye The need for tenotomy, in my opinion, depends on the presence or absence of contraction in the opponent which would be shown by the rotations

DEVELOPMENT OF THE METHOD

In the fall of 1911, when stationed in Southern Arizona with a cavalry regiment, and therefore riding a great deal, the idea occurred to me that an ocular tendon could be shortened in the same way that saddle girths are shortened when for any reason a smaller one is needed but unobtainable This is done by looping each strand of the girth about a piece of rope laid transversely The girth is shortened approximately the circumference of the rope used It is clear that the rope takes the constriction of the strands of the girth, and for that reason there is no tendency to cut the girth

In applying this method to an ocular tendon, all that is necessary is to divide the tendon into several strands and use catgut as the shortener Figure 1 (*A* and *B*) shows in a diagrammatic way the method of placing the gut and the appearance after the looping is complete In this method, while secure, I considered it possible that on absorption of the gut the loops might straighten with loss in effect Therefore I thought it safer to shorten a band on each margin of the tendon wide enough to take the full muscle action, and then to suture the central section forward an amount equal to the marginal shortening, which would free it from all tension during the healing At the same time it was thought better to increase the effect by making a double loop Consequently my work has been in the latter procedure However, I have had several cases in which my effect was permanent from dividing the tendon into several strands and looping each, so apparently my first fears were without foundation I now believe, therefore, the first method will prove to be all right for phorias in which a low effect is desired (Case 25)

It is apparent that the mechanical shortening of the tendon is certain, and can be varied as desired The shortening in the total muscle is not so certain, but depends on its own power as well as that of its opponent I can state positively, however, that no loss can occur at the point of shortening if the loops are properly placed and if the retaining ligature is not tied so tightly as to cut the tendon bands

TECHNIC IN DETAIL

A Exposure of the tendon

1 The conjunctival incision is curved, its summit being a little external to the center of the scleral insertion of the muscle, the ends are opposite their respective tendinomuscular junctions and distant therefrom about 3 mm

2 This flap must be laid well back (Fig 2 *a*) as much as possible by blunt separation to avoid hemorrhage

3 Undermine the conjunctiva toward the cornea (Fig 2 *c*) to make a space for the central section of the muscle

4 Nick capsule of Tenon at one margin of the tendon, and lift entire tendon with its capsule on a strabismus hook In this way the possibility of cutting a fragile tendon is avoided

5 The incision of the capsule of Tenon follows in a general way that of the conjunctiva, and the capsule is laid back (Fig 2 *b*) from the surface of the tendon by blunt dissection as far as possible This separation may be more easily started a couple of millimeters back of the insertion, where it is freely movable and not adherent to the tendon as at the insertion

6 It is important to have the entire tendon in full view in the subsequent steps, therefore its margins must be free in their entire length from the insertion to the muscle substance (Fig 2 *d*)

B Tendon splitting

1 Separate a strip of tendon from each margin about 2 mm in width and extending from close up to the scleral attachment out to the muscular portion This must be done bluntly, and an eye spud makes a convenient instrument. It is important to have the tendon strips of practically equal width (Fig 3 *a*)

2 Ligate the remaining central section of the tendon about 4 mm from the line of insertion (Fig 3 *b*) using 00 or 000 catgut Cut one end close, leaving [illegible] long for [illegible]

purposes later Cut this central section about 3 mm from the insertion and lay it back out of the way (Fig 3 c)

C Separate body of muscle from any possible adventitious attachments to the sclera

D Shortening the marginal strips

1 Use 20 day Lukens catgut because it contains no irritating substance, such as chromic acid, which might cause a reaction

2 It must be made completely flexible by soaking in tepid sterile water This is very important, for if the least stiffness is present, the succeeding steps are made more difficult

3 Double the strand, which should be about 10 inches long, and pass the center loop under one marginal strip, using a small hook to help draw the loop under the strip (Fig 4 b)

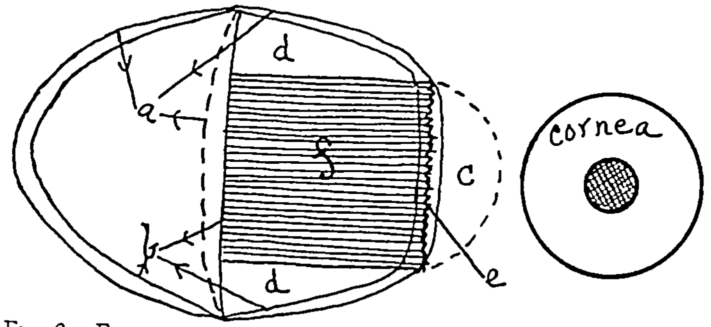

Fig 2—Exposure of tendon a, outlines of conjunctival flap, b outlines of flap in capsule of Tenon, c area of undermined conjunctiva d, sclera clear view of and easy access to margins of tendon, e line of insertion on sclera, f, tendon

4 Draw the two ends through the loop (Fig 4 c), and pull down fairly snugly around the *center* of the strip, thus making a double half hitch It is *very important* to have the loop in the center for, if too close to the line of insertion, there may not be enough length of tendon to make the loop on that side

5 Arrange the ends as shown in Figure 6 *a*, for if crossed as shown in Figure 6 *b*, the next step cannot be accomplished properly

6 *Straighten* the catgut by drawing the ends in *opposite directions*, whereupon the double loop will be transferred and now appears in the tendon, the gut being straight (Fig 6 c)

7 The assistant must hold the catgut taut during the succeeding steps

8 The two tendon loops are slid into *close contact* with each other by pinching with iris forceps This is *very important*, for it serves to take the slack out of the catgut and thus prevents the retransfer of the double loop back to the catgut

9 These loops are held in this close contact by a 00 or 000 catgut ligature (twenty day) placed as shown in Figure 6 c (the white knot) It is not tied tightly, for it is not intended as a suture, but merely to prevent a retransfer of the double loop Cut ends close

10 Cut ends of large catgut as shown in Figure 6 c at the black lines on each side of the loop, which shows diagrammatically the appearance of one marginal shortening completed

11 Shorten the other marginal strip

E Suturing central section A double armed thread of 000 twenty day gut is used, the two needles being passed through the tendon stump from below as shown in Figure 4 *c*, thence through the central section, thence through the capsule of Tenon, and tied as shown in Figure 5 *c*, the assistant holding the tendon forward by gentle traction while the tie is being made The traction end is then cut off

F Conjunctival Suture I now use kangaroo tendon divided finely so as to pass easily through the eye of the finest eye needle The needle pierces one margin of the wound from below, and passes over and pierces the other margin from without As the tie is made the conjunctiva everts, but on cutting the two ends it returns to position, carrying and burying the knot Place as many as needed to close the wound properly As all the knots are buried, there is nothing to irritate the palpebral conjunctiva, and so patients complain of but little pain

G Bandage the one eye for two or three days for protection only

To repeat, the points essential to success are

1 A clear field of operation with the entire tendon in view

2 Placing the catgut loop the proper distance from the insertion

3 Sliding the tendon loops into close contact and retention in that position by the ligature of fine catgut

COMMENT

1 There is no constriction in the marginal shortenings, which are by loops, not sutures These loops of tendon constrict the catgut, not themselves

2 The suture holding the central section is free from tension—the marginal strands taking the full muscle pull even when in action Therefore there is no need for overcorrection

3 For these two reasons there can be no loss of effect through slipping or through cutting and sloughing of sutures

4 Before the catgut can be absorbed, the central section is firmly united to the sclera

5 The "bunch" is not large

6 The effect is necessarily straight forward, therefore no torsion or vertical deviation can follow

7 There is a *definite shortening in the inelastic tendon* equal to twice the circumference of the catgut used plus the length taken up by the overlapping and thickness of the marginal strip

8 The amount of shortening may therefore be varied by (*a*) the size of gut, and (*b*) the width of the tendon band It is possible to graduate the effect to correct phorias as well as tropias, as shown by the case of seven degrees of esophoria The wider the band, the greater the effect, owing partly to the actual length taken up in the loop, but chiefly to the fact that more muscle fibers are thus allowed to take the strain of the shortening The narrower the band, the fewer the fibers and the greater the chance for loss in effect from stretching I feel certain that this explains some of my early insufficient results

9 The tendon shortening does not, of course, represent the total, for the muscle fibers are elastic and must stretch a variable amount, depending on the power of the muscle itself and that of its opponent This, therefore, I believe to be the only unknown quantity in this operation

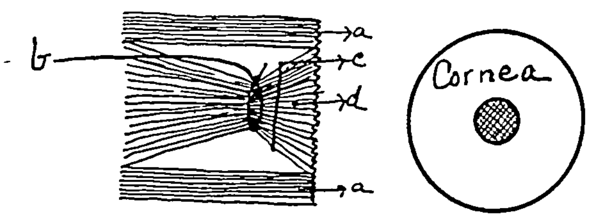

Fig 3—Tendon splitting a tendon strips separated, b ligature on central section one end left long, c, line of cut across central part, d scleral stump of tendon

10 It can be done as an office operation, as shown by practically all my cases This is so because the shortened marginal strands are able to take the full muscle pull To determine this positively, I operated a number of times on pig's eye muscles After shortening a strand of tendon I would apply force until rupture occurred, and in every case it took place at the tendinomuscular junction and without affecting the point of shortening If Howe is correct in stating that the internus has a maximum lifting power of but 1 ounce, it is clear that by no possibility can the point of shortening be affected by the full muscle pull plus that of its opponent

11 This splint principle can be used in connection with almost any of the other types of advancement, for (*a*) the central section may be resected, tucked, or actually advanced, using scleral or other sutures, and (*b*) a central band may be shortened and the lateral portions be handled as in Worth's and similar methods

12 Several of my cases show that the marginal shortenings are permanent even after the catgut is absorbed Therefore the method can be used to correct torsions as follows

(*a*) One margin may be shortened and the other left untouched (Case 30)

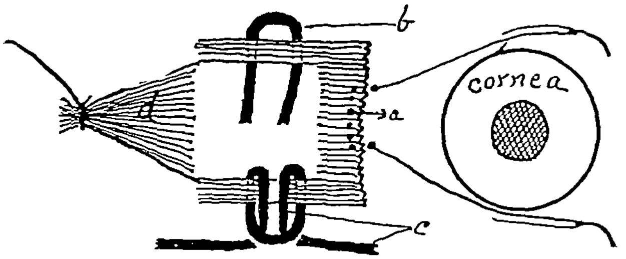

Fig 4—Shortening marginal strips *a* suture loop under scleral stump *b* catgut loop under tendon strip *c* ends of catgut drawn through loop around tendon strip *d* central section held back *e* needles of double armed thread

(*b*) Both may be shortened, but one more than the other, using different size gut and bands

(*c*) One margin may be tenotomized, and the other shortened This would be the equivalent of Steven's "extendocontraction," with the "contraction" a closer approach to certainty

13 Size of catgut The case reports show my results and show that the same result is not always secured from the same size gut A great deal depends on the condition of the muscle Outside of this I now believe that the width of the marginal band influences the result as much if not more than the size of gut

14 There is one point in muscle work which I think is explained by my results, and that is the fact that an overeffect from advancement of an internus is unknown unless the externus be cut By my method the possibility of loss at the seat of operation is eliminated, therefore the reason must be an anatomicomechanical one It is well known that, in shortening an internus, and thus rotating the globe, we put the externus on a stretch — the equivalent of also advancing it Owing to the fact that the externus wraps around the globe (contact arc) to a much greater extent than the internus, it has a greater leverage The globe under this double pull must go into a position in which the two forces balance (parallelogram of forces) and therefore must recede into the orbit The mechanism is probably similar to those cases of divergence with insufficiency of convergence attended with retraction into the orbit on attempts to converge

This result does not occur to such an extent when shortening an externus, because, while the internus is likewise strengthened, its leverage is not increased by an increase of its wrap about the globe In the primary position the internus has but little contact with the globe as compared with that of the externus Figure 7 shows this more clearly than any description The less the degree of divergence the less effect proportionately, till in pure cases of insufficiency of convergence the distant balance remains unchanged in spite of the enormous increase in the power of convergence secured, all of which bears out this idea and Landolt's statement

Using this operative procedure, it is my opinion that shortenings should be the operation of choice, reserving tenotomies as a means of "fine adjustment" to correct any remaining deviation In this connection and at this time I believe that my multiple incision method will give all the effect desired In one of my cases in which there was a remaining exophoria after shortening both interni, it gave me 22 prism degrees of effect, 18 of which were over I had to fish in and suture forward finally, securing orthophoria This is cited to show that it will afford enough effect

Finally, I wish to say that I have found it desirable to shorten the interni under general anesthesia because of the lack of space in the inner canthus The manipulations are felt too much at the origin of the muscle

REPORT OF CASES

Case 1—This was to determine the practicability of the technic, and was on a blind eye exotropic about 15 degrees Using a No 3 gut, a complete immediate effect was secured which had diminished very little two years later

Case 2—This was one of about 20 degrees alternating exotropia in which by two operations five months apart a perfect result was secured In each operation No 3 gut was used

Case 3—One of 22 degrees esotropia in which about 15 degrees of permanent result was secured, No 3 gut being used Second operation refused, patient being satisfied with the cosmetic result from the first

Case 4—One of 15 degrees esotropia in which a complete result was secured *in one operation*, No 3 gut being used

Case 5—One of about 35 degrees esotropia in which three weeks after operation there was lateral orthophoria and binocular superposition from one operation, No 4 gut being used

Case 6—One of 50 degrees esotropia in which by a double externus *shortening* at *one* sitting was secured about 40 degrees of correction, No 4 gut was used

Case 7—One of 50-60 degrees exotropia in which parallelism of the visual axes was secured from one operation, No 4 gut being used

Case 8—One of 18 degrees esotropia in which the immediate effect was only about 10 degrees, in spite of using No 4 gut Three days later a gonococcal conjunctivitis developed and ruined any chance, so that the cause of the poor immediate effect will never be known

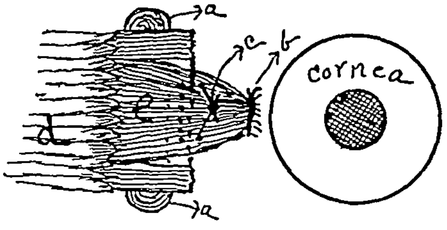

Fig 5—Suturing central section *a* bunches on marginal strips from looping *b* knot of traction ligature on central section *c* tie of suture holding central section forward *d* muscle *e* tendon

Case 9—One of 20 degrees esotropia in which an immediate effect of at least 10 degrees over-correct on was secured, No 4 gut being used Three weeks later the condition was reported to me as one of "perfect correction"

Case 10—One of paresis of right external rectus of a year's standing, the result of fracture of base of skull Binocular field was but 8 degrees to the right while the actual rotation was 40, about 13 degrees less than that of the other eye. No 3 gut was used, as only a small effect was desired Twenty days after the operation the rotations were normal with no diplopia, which had been very annoying before Six months later the result was reported as perfect there being no diplopia with normal rotations monocular and binocular

CASE 11—One of 20 degrees esotropia in which a marked overcorrection was secured by a No 4 gut This diminished somewhat in the succeeding days, but I had a report stating that six months later there was but 2 degrees remaining esophoria with binocular vision and full comfort in the use of his eyes

CASE 12—One of 15 degrees esotropia in which the immediate effect was sufficient—a No 3 gut being used—but six months later the condition was reported as having 7 degrees remaining esotropia This could easily be corrected by a second operation on the other eye

CASE 13—One of 70 degrees paralytic external squint of the right eye due to a third nerve paralysis of over twenty years' duration There was absolutely no power of adduction, the eye being set in the excessive divergence The eye was blind for all practical purposes, having only $^{10}/_{200}$ It was made clear to the patient that by no chance could a complete straightening be obtained, but she said she would be satisfied if it could be gotten anywhere "to the front" In this case the central tongue was simply laid forward on the sclera, dependence being placed entirely on the marginal shortenings No 4 gut was used, and two weeks after the operation the divergence was 20 degrees, giving a result of 50 degrees In this case, though, a complete tenotomy of the tendon of the externus was done It seemed as though there was an attempt at adduction made but not a useful amount

May 24, two and one-half months after the operation, the deviation was between 15 and 20 degrees measured on the perimeter, showing a slight gain She also had gained a slight power of inward rotation

CASE 14—This case measured close to 35 degrees deviation inward of the right eye by perimeter and phorometer In this case also only a cosmetic result was looked for, owing to a marked impairment of central vision due to an old macular hemorrhage A tenotomy of the internus had been done in the fall of 1914, limited to the tendon proper but without much permanent effect The right externus was shortened by my method, May 29, using a No 4 Lukens gut and suturing the central tongue with a 000 forty day Van Horn gut A slight immediate overcorrection was secured, possibly 5 degrees This was to naked eye appearance, and most likely due to a slight corneal decentration, as two weeks later the eye tested practically straight on the perimeter The patient went to her home in Stockton and informs me that she took the bandage off the operated eye the next day and went to her work as stenographer the second morning, and has not lost an hour from her work because of the operation After four months the eyes were still parallel both to appearance and tests, and there was binocular fusion of red and white images in the red glass test

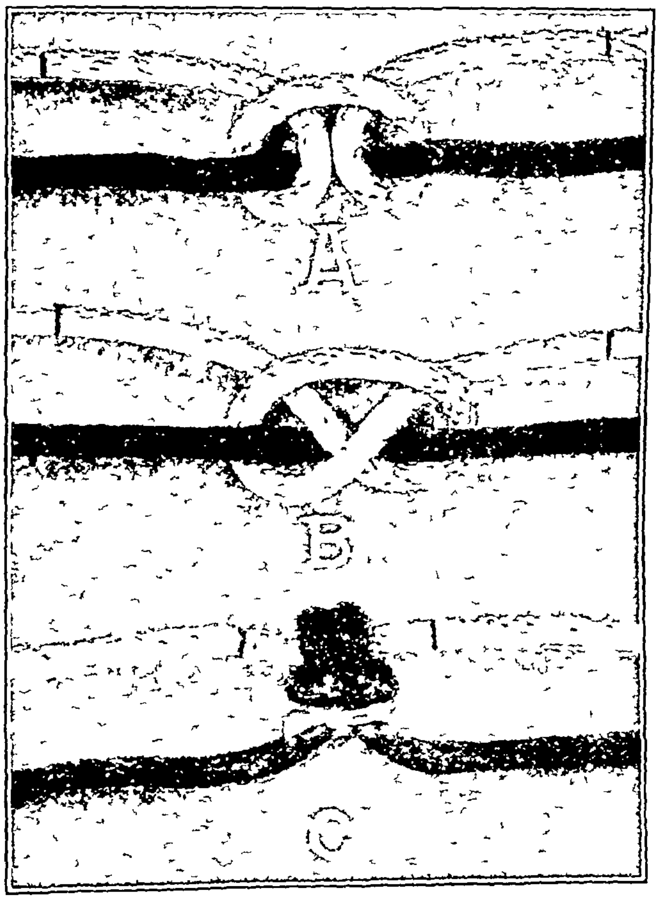

Fig 6 shows at A the proper arrangement of the catgut ends before straightening, at B the improper way and at C the appearance diagrammatically of a completed marginal shortening

CASE 15—One of 50 degrees (arc) concomitant esotropia with marked amblyopia in right eye The right externus was first shortened, No 4 gut being used The immediate effect was markedly insufficient, but at the end of two months there was but 10 degrees remaining deviation At this time the left externus was shortened, which completed the cosmetic result After this the patient began to have trouble from a 19 degree hyperphoria, which was not expected because of the poor vision For this the right inferior rectus was shortened, using 00 gut for fear of overcorrection This was an error of judgment, as practically no correction was secured She is now waiting for vacation for me to repeat this operation

CASE 16—One of paresis right superior rectus with a downward deviation in this eye of 40 degrees The patient had but 10 degrees upward rotation She was able to fuse images only in the lower limit of the field This forced her to hold the chin high, which caused pains in the back of the neck The right superior rectus was shortened, No 4 gut being used Under local anesthesia it was a difficult operation At the eleventh day she was able to fuse images to a point 10 degrees above the horizontal, as determined on the perimeter At this time she left for her home in the interior of the state with the understanding that she was to return for operation on the inferior rectus of the other eye I have been unable to get a further report from her

CASE 17—One of 22 degrees concomitant esotropia with normal vision in each eye Right externus was shortened, No 4 gut being used, with an immediate overcorrection of about 10 degrees Final effect at end of 4 months esophoria 1 prism diopter by phorometer, no cyclophoria, no vertical deviation, convergence to 2 inches, stereoscopic binocular vision, prism abduction 17 degrees, a perfect result

CASE 18—One of 35 degrees divergence of left eye with a paretic condition of its internus as shown by defective inward rotation This eye was practically blind from large colobomas of choroid, lens and iris, and was myopic about 20 D Moreover, each cornea was decentered in 10 degrees The right eye had the colobomas as in the left, except that the macular region was not involved and the vision was $^{20}/_{30}$, there being but a low error. The left internus was shortened, No 4 gut being used, with an insufficient result, as the muscle was extremely fragile Therefore the opponent was cut, allowing a full result She left for her home in Utah at the end of two weeks when the visual axes were parallel, but there was an apparent divergence due to the corneal decentration I have had a number of reports stating that this condition is maintained

CASE 19—One of epilepsy with 7 degrees exophoria and insufficiency of convergence, as shown by diplopia at 8 inches This was my first case of the kind, and proved to my satisfaction that an overcorrection from shortening an internus is impossible The first operation was on the left internus, No 4 gut being used, and a marked convergent squint resulted This entirely disappeared so that at the end of two months he still had his 7 degrees of exophoria, but could now converge easily to 3 inches from centers A partial tenotomy of the left external rectus was now done, which as a final effect reduced the exophoria to 5 degrees As his convulsions had markedly diminished in frequency and severity, we decided to camp on the trail of the deviation, so the right internus was shortened, No 3 gut being used Again a marked convergence resulted which disappeared, leaving an exophoria of 3 degrees as a final result with a convergence to 1½ inches from centers At this date the right externus was cut by my multiple incision method, correcting to 6 degrees esophoria, which had increased to 18 in two days This was corrected by a mattress suture so that at last was secured a condition of full orthophoria in all directions His convulsions are much less frequent, and he is now able to get along without bromids

Case 20—One of 35 degrees esotropia (concomitant) with vision in each eye approximately normal Left externus shortened, No 4 gut being used, with an immediate effect about 5 degrees under During the subsequent two months the effect progressively increased till the final stage, when there was an exophoria of 6 degrees by phorometer At this time there was no cyclophoria and no vertical deviation, prism abduction 18 degrees and binocular vision by superposition as shown by fusion of red and white images and absence of stereoscopic vision

Case 21—One of paresis of right externus since childhood Outward rotation was but 15 degrees, and she had to look to the left to avoid diplopia The muscle was shortened, No 3 gut being used, producing an evident divergence Condition at the end of six months binocular vision easily in the primary position and by a special effort as far as 30 degrees to the right, no vertical deviation or cyclophoria, rotates eye out 40 degrees, an increase of 25 degrees, noncomitant esophoria 10 in right and 20 in left Her singing voice much better, owing to the ability to carry head in normal position, thus avoiding tension on neck muscles

Case 22—One of developing exotropia, the screen deviation being 25 prism degrees Diplopia cannot be elicited, owing to habit of suppression However, he can hold eyes in convergence for an instant, and the amblyoscope shows presence of binocular stereoscopic vision He is a student and has constant headaches Aug 30, 1915, the left internus was shortened, No 4 gut being used Six months after operation he tests as follows orthophoria at 20 feet, exophoria 4 at 13 inches, converges easily to 3 inches from centers, reports entire absence of headaches since operation, and has been at his college work continuously since two weeks after its date

Case 23—One of 15 degrees esotropia Had an advancement of right externus with complete tenotomy of its opponent three years ago That eye could rotate inward only 35 degrees, owing probably to the tenotomy Left externus shortened, No 4 gut being used, with the production of a marked divergence, so she was permitted to do without the bandage and directed to rotate eyes in order to lessen the effect At end of two weeks she had 5 degrees of esophoria, which was entirely corrected by her high hyperopic correction She then disappeared to her home down the state, and I have not heard from her

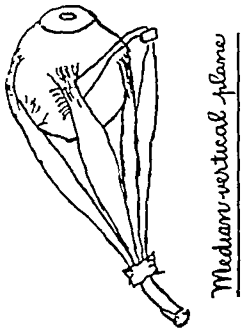

Fig 7 (from Stevens Motor Apparatus of the Eyes) shows that in the primary position the wrap or contact arc of the internus is negligible as compared with that of the externus and hence that contact arc in itself is of no especial importance The greater the degree of a divergent squint the greater the contact arc of the internus

Case 24—One of 20 degrees right exotropia due to paresis of right internus shown by defective inward rotation Only a cosmetic result desired as vision in O D was but 2/200 The right internus was shortened with the production of a slight convergence It was found to be very fragile This lessened in the succeeding days, and as she complained of a pulling pain in the outer side of orbit, it is probable that a tense externus stretched the paretic internus One week after operation there was 10 degrees exotropia, so that externus was cut according to my multiple incision method This made eyes parallel, which she had maintained at the end of two months

Case 25—One of 7 degrees (prism) esophoria with headaches Left externus shortened, using 00 gut and dividing the tendon into five narrow strips, each of which was shortened in the same way Immediate effect was orthophoria, the final effect at end of two months was 1 5 degrees of esophoria and absence of headaches

Case 26—One of 40 degrees concomitant esotropia, some amblyopia in squinting eye Left internus shortened as in previous case, but using three tendon strips and No 3 gut Final effect at end of two months was 6 degrees—prism—esophoria remaining when wearing correction This case also improved in effect during the healing period

Case 27—One of 30 degrees esotropia with normal vision in each eye and binocular stereoscopic vision Right externus shortened, using No 3 gut and a narrow band with the idea of getting a half correction in this eye and the remainder at a second operation on the other eye No bandage was used, and she got to wearing her correction the afternoon of the operation Four days later she had 10 degrees arc remaining This rapidly diminished till at the end of six weeks she had but 3 prism degrees of esophoria At this time she had 19 degrees prism abduction and entire comfort in the binocular use of her eyes

Case 28—Another case of epilepsy with exophoria of 18 prism degrees Some time before both externi had been cut by an oculist of Los Angeles without any final effect on the deviation or symptoms I figured her to have a case of what Valk calls dextrophoria, as her rotations to the left were defective in each eye So I shortened her right internus, using No 2 gut and a narrow band This was an error, and was somewhat in deference to her father's idea, he being an oculist Only 8 degrees of correction were secured, and without any change in her epileptic attacks Nine days after the shortening I cut the outer two thirds of the right superior and inferior rectus, because of an idea that they might be the cause of poor result from the complete tenotomies of the externi The cutting was stopped when she tested exophoria 1 degree and no cyclophoria This diminished somewhat, so that at the end of twelve days she had 4 5 degrees of exophoria by the screen test and convergence easily to 2 inches Her epileptic seizures now practically stopped, except when she tried to read Before this she had to have both eyes absolutely occluded to prevent them She then went home to Los Angeles The last report from her father was six weeks later to the effect that she had no trouble except when reading, which would cause a return of her petit mal In this letter he seemed so positive that all my ideas on the case were wrong that I replied to the effect that "too many cooks" had a bad effect, and if he wanted me to complete the case he would have to leave it entirely to me This was two months ago, and I have had no reply, so his frame of mind can be easily imagined My intentions were to shorten the inner third of the right upper and lower recti first, then if necessary to repeat the same operation on the same muscles of the other eye Owing to an inward rotation of 60 degrees in the left eye and a convergence to 2 inches, I saw no indication for shortening the left internus I intended to reserve second tenotomies of the externi as an absolutely last resort.

Case 29—One of at least 60 degrees esotropia in a cretin 6½ years old He is also myopic about 7 D in each eye Two operations were done at six weeks' intervals, both externi being shortened, Number 3 gut being used each time At the first operation the central tongue was sutured forward, while at the second the tendon was shortened in three bands The first operation gave over half of the total error, which was not much improved by the second, so I am inclined to lose my faith in the security of an entire shortening by loops alone in high deviations At times, however, his eyes are perfectly parallel for distance regard This patient will need to have further assistance as afforded by my multiple incision lengthening of one or both interni, and will be the first of the entire series to require such aid

Case 30—One of a triple deviation as follows esophoria 25 degrees of arc 10 degrees left plus cyclophoria, and 10 prism degrees left hyperphoria Vision in each eye was -9/15 Dec 11, 1915 the lower margin left externus was shortened Number 2 gut and a fairly wide band being used This was done through a short incision parallel to the lower margin of the tendon This gave an immediate correction to exophoria 1 left hyperphoria 1 and left plus cyclophoria 2

No bandage whatever was used On the eighteenth he had to leave for his home in northern California, at which date he tested as follows esophoria 4, left hyperphoria 3, left plus cyclophoria 5 He had, however, binocular fusion without symptoms He promised to keep me informed of progress, but has failed to do so I expected in this case to do further operative work to correct the cyclophoria and hyperphoria This was to cut the upper portion of the same muscle to correct these two conditions This would increase the esophoria which could easily be corrected by a shortening of the externus of the other eye

Case 31—One of 20 degrees esotropia with normal vision in each eye and binocular stereoscopic vision as determined by the amblyoscope Left externus shortened, Number 2 gut being used for fear of doing too much This was an error of judgment, as the final effect was insufficient, there being a remaining deviation of 5 degrees of arc

Case 32—One of 25 degrees arc in an eye practically blind from a corneal wound, the squint existing, however, before the injury Jan 30, 1916, left externus shortened, using Number 3 gut and a horizontal incision over middle of tendon, which made the operation somewhat more difficult but left a beautiful scar The immediate effect was absolute parallelism which was maintained the last time I saw him, seven weeks later

Case 33—One of pure insufficiency of convergence with headaches after near use of eyes and no discomfort in abscence of such use Diplopia occurred at 6½ inches from rotation centers He measured as a case of dextrophoria as rotations to the left in each eye were defective Inward rotation of the right eye was but 40 by tropometer, therefore this was the muscle selected for shortening, which was done, Jan 30, 1916 March 25, he tested as follows absolute orthophoria in all directions and a convergence to 3½ inches from centers Since reaction from operation subsided he has had no headaches from use of the eyes as before

Case 34—One of alternating esotropia of approximately 30 degrees in a child of 3½ years The refractive error was low, so nothing was to be expected from glasses In view of the fact that the parents were en route to Honolulu for a three year stay, it was thought best to operate in order to maintain binocular vision Accordingly the left externus was shortened under ether, March 2, 1916, using Number 2 gut and a medium width band, as an overcorrection was not desired There was but little reaction, and on March 6, the date of sailing, the eyes were straight to naked eye appearance As many of my similar cases have gained rather than lost during the healing process, I hope that she will at least maintain her status This case is given simply to show the immediate effect

Case 35—This was one of 25 degrees alternating esotropia in a child of 3 with good vision in each eye The right externus was shortened under nitrous oxid anesthesia, March 3, 1916, using Number 2 gut and a medium width band The tendon was very fragile This was an absolute failure in that I got practically no effect In other cases I have obtained corrections of 25 degrees from a Number 2 gut, but the probabilities are that the weak fragile muscle stretched

SUMMARY

Out of the forty-two operations in thirty-five cases there were but three absolute failures as follows

Case 8, owing to gonococcus infection several days after operation

Case 15 on inferior rectus, owing to use of too small a catgut, and thus being an error of judgment excusable when it is remembered that it was my first operation on that muscle and I had no previous experience to guide me

Case 35 owing also to use of too small a catgut If this had been a case under cocain the error of judgment could have been corrected at once In future in such cases I shall allow the patients to come out of the anesthetic to see if enough effect has been secured, [illegible] remedy the failure at once

So far tenotomies have been done only to aid shortenings of the interni, and as it happened in all of these except one (Case 19) the interni were paretic or paralyzed One case of esotropia (Case 29) will later require partial tenotomy of one or both interni, but this was one of very high degree I believe this method reduces the need for tenotomy to an absolute minimum

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS TODD AND O'CONNOR

Dr H W Woodruff, Joliet, Ill In general I am in accord with Dr Todd's deductions in regard to the cause of insufficient effect or over effect following operations on the eye muscles I believe that the method of shortening by tucking, combined, if necessary, with tendon lengthening or weakening by partial or complete tenotomies is the most satisfactory method of treatment

I have been a consistent follower of the principles of this operation for the past fourteen years and am unable to understand why so many still practice the uncertain and hazardous advancement which depends after all on a shortening effect on the muscle for its result Whether the advancement operation is used or the tucking operation, some operation which will weaken the opposing rectus muscle is usually advisable I see no objection to the tenotomy if it is properly performed and no over effect produced at the time If such over effect is produced it must be controlled by a suture There is also a difference in dealing with divergent strabismus as compared with convergence, if the effect of the operation is to be aided by tenotomy In convergence no over effect is permissible, in fact a slight under effect is desirable In divergence a slight over effect is a proper primary result Most of the cases of extreme over effect and deformities following previous operations are cases of divergence secondary to too free tenotomies of one or usually both interni Those which I have seen were results of operations performed by advertising doctors (The "cross-eyes cured in one minute without the use of the knife" variety) Some of these deformities were very disfiguring, as in addition to the divergence there was exophthalmos and a sunken caruncle and inability of the patient to adduct the eye Concerning Dr Todd's method of tendon lengthening, I have had too little experience to judge, but it is certainly less easily performed than a tenotomy and under no better control than can be obtained by a suture

Dr W C Posey, Philadelphia I was first led to follow Dr O'Connor's method because it seemed to offer a chance of advancing a muscle without putting in a scleral stitch It is desirable often to sew a muscle forward at an early age, and yet most of us do not like to do this until the child is at least 9 years of age, on account of the thinness of the sclera and the consequent danger and difficulty of the operation The surgical principles of the operation also seem correct, i e, the bringing forward of the two lateral filaments of the muscle and using them as retaining supports until the main body of the muscle has had an opportunity to unite firmly with the sclera Contrary to the experience of Dr O'Connor, in common with my other colleagues at the Wills Hospital who have performed the operation, I have found the procedure a difficult one, one that taxed all my skill as a surgeon The separating of the muscular fasciculi and the adjustment of the loops calls for considerable nicety of manipulation Often after the separation of the lateral fasciculi, there is but little left of the middle portion of the muscle to advance, and in several cases where the muscle was very thin, I divided the muscle and brought forward the entire muscle by tightening the loops While the effect was good for a time, on about the eighth or ninth day the eye slipped back into its faulty position again, showing that the catgut had been absorbed and that no union had occurred in the caught-up loops of muscle tissue The result of the operation is attained, therefore, by the advancement of the tongue of muscular tissue, as Dr O'Connor has stated In several of my cases where the result was not altogether satisfactory, the failure was caused, I think, by tying the 00 catgut strands too tightly about the No 4 catgut loops, for I suspect that the muscle fibers were divided in consequence and no support given the tongue flap by the marginal strands The author fixes the muscle tongue to the sclera by passing sutures through the rest of the muscle left adherent to the sclera After the marginal loops have been brought forward, however, I have been unable to find this muscle root and have been compelled to anchor the sutures into the sclera I have operated in seventeen cases, four with divergent, the remainder with convergent squint No 4 catgut was used in all of the cases, and I did not try to gage the effect of the procedure by a thinner or thicker gut in any instance The amount of effect desired was obtained by varying the shortening of the central tongue of muscle fibers and by tenotomy of the antagonist muscles at the time of the advancement The results were on the whole very good, though I cannot say they were any better than I have obtained by other methods of advancement There was marked reaction in a number of the cases and marked sloughing at the site of the operation in two instances This may have been due to infection, though I suspect that the strangulation of the muscle tissue by too tightly tied gut may have been responsible Dr O'Connor's method, however, is a most ingenious one, and deserves to be given repeated trials, for if a muscle can be advanced as he claims without a scleral stitch, it marks a great advance in our operative treatment of squint in young subjects

Dr. Oscar Dodd, Chicago In regard to those cases in which the internal rectus muscle has been entirely severed with practical loss of movement We have had some men in Chicago who have advertised to correct strabismus "without the use of the knife" They have operated on these patients in their offices by severing the tendon entirely, or even the muscle itself I have had the opportunity of operating in some of these cases later, and I have found that the muscle was retracted toward the orbital wall by the check ligament, and when we dissect down we find it drawn back in a mass where it can easily be loosened and brought forward I think it is a good thing to keep in mind, that instead of simply bringing forward the capsule, as Dr Todd mentioned, we should endeavor to bring forward the muscle also, as it will give a decidedly better result

Dr. L Howe, Buffalo The discussion recalls by contrast a visit to Stephan Bernheimer of Innsbruck He wrote the article on the third nerve published in the first edition of Graefe-Saemisch Handbuch Nearly twenty years afterward I saw him still at work with experiments on the nucleus of the third nerve The point is that we should hold fast to what we really know if we wish to understand new theories presented here

Dr G C Savage, Nashville, Tenn There is one important thing for us always to know before we do any kind of operation on any muscle, and that is whether there is any thing else to correct than the error of that muscle To illustrate One should always know if an esophoria about to be operated on is complicated by a hyperphoria of one eye and a cataphoria of the other, and a plus or minus cyclophoria of both eyes It is just as easy to correct two or three errors with one operation as it is to correct one error It must be said that it is also easy in trying to correct one trouble, to make another worse or even to bring about a new trouble But the one who knows what to do and how to do it need not hesitate to undertake muscle operations The muscle shortening operation, in principle, is here to stay I devised it twenty-five years ago, and I do not believe that any one of the numerous modifications which have been proposed is as good This operation is easy to perform and is effective in results None of the many modifications are as free from trauma, nor can they be more efficient They are all more complicated and harder to perform Todd's tenotomy (both a tenotomy and a myotomy) will lengthen the too short muscle and is far preferable to a complete tenotomy A complete tenotomy of a rectus muscle should never be done A partial tenotomy, whether central or marginal at the tendon attachment is easier and I believe is better as to effectiveness The cut fibers will always retract and the marginal or uncut fibers will stretch The cut in the capsule should be co-extensive with the cut in the tendon, else retraction will be hindered No tenotomy should be done on a muscle unless that muscle has excess of tonicity Always one should be careful not to sever too many fibers

Dr Will Walter, Chicago I have performed the O'Connor operation three times, and it is a successful operation as far as shortening of the tendon goes I do not think it may be graduated in the way the tucking operation of Dr Todd may be graduated It seems to me, however, to be free from the danger of cutting and tearing that accompany the other operations One of my cases will interest especially the author and those who have performed the operation The case was one of about 50 degrees divergent squint with approximately equal adversion—about 30 degrees each eye I decided to divide the operation between the two interni I used No 3 catgut on the first eye and I got about half the correction When I undertook the other side a month later I could not find any tendon attachment, I undertook capsule advancement and it failed, it tore out I later went back to the first tendon to see whether or not I could get further through shortening, and the tissues were found all matted There was adhesion to the ball, about 2 or 3 mm back from the original attachment. I take it that the hyperemia necessary to absorb the catgut produces tremendous irritation, with adhesions As the shortening without suture under tension is *the great desideratum* and as the O'Connor operation has its faults, I have a shortening operation of my own and *without any sutures* It is not sufficiently tried out to warrant its description now but next year I shall give it to you

Dr Wendell Reber Philadelphia My feeling is that no strabismus operation should be done until we have employed all known measures to secure thorough local anesthesia Ordinarily sloughing is due to too strong anesthetic solutions All the synthetic local anesthetics are protoplasmic poisons and if used too freely produce sloughing It does not make a great deal of difference which operation one employs I believe with Dr Todd that any operation which does not disturb the primary insertion is to be preferred to one which does One should learn to do some one good operation well under perfect local anesthesia If ethyl hydrocuprein or quinin and urea hydrochlorid in 0 5 per cent solutions are used the patient will ofttimes have perfect comfort eight to ten hours after the operation I do the Worth, the LaGleyse and the tucking operation, and I have done Dr Woodruff's operation I think any operation if we do it rightly and study the case as to its rotations before operation, and do it under local anesthesia with the eyes under the same innervations as the patient ordinarily enjoys, (so that we can control the effect), is most likely to give the good results one is striving for

Dr. F C Todd Minneapolis The point of my paper was to call attention to the deformities produced by improper operation It was brought out by Dr Woodruff and myself that many of the most common deformities were those produced by complete tenotomy I hope that we emphasized that sufficiently I disagree with Dr Savage in the idea that we get any effect unless we cut all the fibers We do get effect if we do not cut all the fibers if we rupture the rest of them, and that is what it amounts to I think it is very undesirable to cut the muscle If you do it reattaches itself farther back on the globe instead of merely lengthening, as it would if cut on the edges I want to repeat the suggestion that the wound in the muscle must not be in contact with the wound in the conjunctiva With the tucking operation that I have previously described the attachment of the muscle is not changed The fold in the muscle is forward and here is where it binds itself down not changing the attachment to a different location Its principal advantage is the regulating effect.

Dr. Roderic P O'Connor, Oakland Calif Dr Posey mentioned the difficulty of separating the marginal bands The point is to have a large conjunctival incision which will lie back and permit the separation of the margins of the tendon from the capsule of Tenon so that the entire tendinous portion of the muscle is free and in clear view Then, when that stage is reached, I have a hook, not an ordinary tenotomy hook with a curved end, but a probe bent at the end, the portion beyond the bend being straight and about 15 mm long This is placed under the tendon which then flattens out its full width The ordinary hook will bunch it With the tendon flat you can take a knife or spud and by running it between the fibers easily separate the marginal bands Leaving the hook in place I then run a pair of blunt iris forceps under the central section, catch the end of the 000 catgut, withdraw and tie the gut about this section several millimeters from the insertion I do not use a scleral stitch but pass it through the stump of tendon left at the old insertion In this way the effect of a resection is obtained with a broad surface for union The width of the marginal bands has a great deal to do with the result The wider the band, the more muscle fibers are attached to it to take the strain and the less the chance of loss from stretching The wider the band, within reason, the greater the effect you will get As far as reaction and sloughing are concerned, I had a severe reaction in the one case in which I tried chromic gut I have had one case of infection with sloughing but not enough to cause a total failure This case was operated in a strange place and I found out later that the nurse had used an old stock solution of cocain which I blame as the cause of the infection I have never had any trouble with 20 day noniodized gut

Dr Posey spoke of two cases in which he thought his sloughing was due to tying the large gut too tightly I do not think he meant this as the large gut should not be tied

Dr Posey I meant the 00 gut

Dr O'Connor The 00 gut I put in for safety to hold the marginal shortenings simply by making a circle too small to permit reversal It should be tied without any force in order to avoid constriction of the marginal bands and the consequent sloughing Another factor that influences the result is the power of the muscle A weak one will stretch and may require relief by partial tenotomy of the opponent, but that does not affect the shortening in the tendinous portion, there is no slip there If any loss occurs it is in behind or due to some factor entirely outside the point of operation itself Cyclophoria can be corrected by this method

My method gives the same result as Dr Savage's but it is not a modification of his The principle is entirely new and I claim that mine is the only method in which tension and constriction are avoided without the use of tenotomies of the opponent I use finely shredded kangaroo tendon throughout the operation, except where the shortening gut is used so the patient does not have to be bothered by removal of sutures Tenotomies are not required except as a last resort and in my opinion that is one of the biggest advantages of the procedure

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The Research Mind—The research mind keeps up to date in its correlations and brings the inspiration of the best and newest into each teaching day Sometimes one feels that the external drive toward research by university sentiment leads to many many efforts and to abortive results Perhaps, however, even though the result to science is small, the effect on the individual is salutary The greatest sport the world knows is the search for the absolutely new in any line One need only sense the joy once to feel its lure—R L Wilbur

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LINITIS PLASTICA

WITH REPORT OF CASE *

GILBERT M BARRETT, M D

SAN FRANCISCO

History—Mrs J F W, aged 39, housewife, married, was troubled with disturbance of digestion for five or six years Her husband died of cancer of the stomach Her father did not have a "strong stomach" Both the father and the mother were troubled with hemorrhoids The mother had "similar symptoms to daughter," she declared The mother had recently died of valvular cardiac disease The father was living and well The patient was born in Nagasaki, Japan, and lived there until she was 16 When a girl of 16 or 17, she had attacks of "gas in the bowels" She had pneumonia She was a singer, a strong swimmer, and athletic She married at 21, and had three children, and a strenuous married life for twelve years One child died of diphtheria at the age of 6 years In 1905 the patient was operated on for trouble with the appendix, uterus and tubes and for the purpose of repair

Present Illness—The patient complained of gas on the stomach and indigestion, and a "fluttering in her heart" affecting "circulation and breathing" These attacks sometimes came on every two or three months, and occasionally every month for two or three months If she ate heartily at night or after a long trip, an attack was sure to come on One of her worst attacks came after eating ripe cherries She was accustomed to go to St Helena for rest and massage about once a year She seemingly improved temporarily, but along with that for about five years she suffered gradual loss of weight, losing 17 pounds She had attacks of gas and pain, and was given light diet and a digestant and improved She rarely ate breakfast, and cared not at all for cereals Chops and French-fried potatoes and asparagus formed a satisfactory meal, and 1911 and 1912 were the best years she had since becoming ill Roentgenograms, when I first saw the patient in 1912, did not show any such condition as the second plates, which were made in June, 1913 Then in May, after another visit to St Helena, she came again There was little vomiting after taking food Another Roentgen examination was made in June, 1913 There was not food in the stomach long enough to secure a specimen after twenty-five minutes The patient's muscles had been soft and flabby for the last year There were no tarry stools The patient took little food at the last There was no food which would suit the patient or digest The abdomen was swollen She said that she "could taste a secretion at times seeming to come from the esophagus" There was no disturbance of the urinary function She had some gas, which was worse at times, but not at the same time daily She had no headache except at times Dyspnea was present during some attacks but not during all During the period from October, 1912, to June, 1913, I did not see the patient, as she was feeling a little better, or at least thought she was

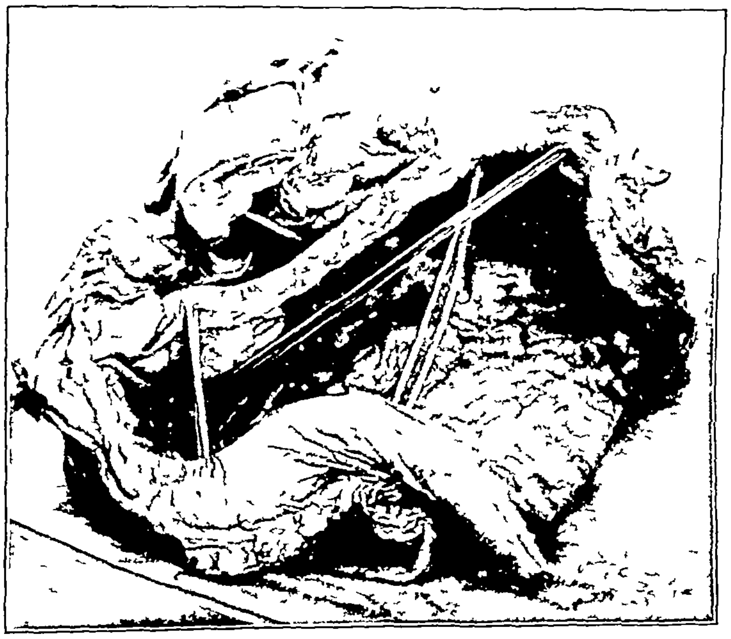

Fig 1—Appearance of interior of stomach, with thickened edge

Physical Examination—The patient walked in for the first examination, looking a trifle pale, and somewhat thinner than she should be Her principal complaint was an "indigestion pain" with a fluttering in her chest There was no disease of the nervous system, nor any history pointing thereto The head, throat, teeth, mouth, chest and heart were negative The abdomen was no more prominent below the navel than normal, in fact, the patient had a flat abdomen with no areas of dulness in the flanks or in the hypogastrium on percussion It was slightly tender in the epigastric region, but no mass could be felt, nor was any marked resistance noted Roentgenoscopy at this time revealed an apparently normal stomach in outline with a questionable filling defect on the greater curvature There was rather rapid emptying of the stomach There was nothing absolutely definite as to organic disease

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* Read before the San Francisco County Medical Society, St Luke's Hospital program, Dec 7, 1915

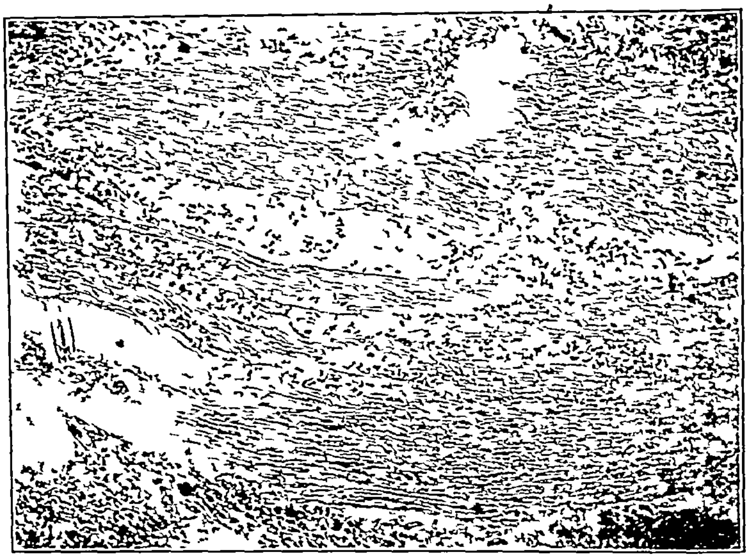

Fig 2 —Microscopic appearance of cancer cells in muscularis

Course—The patient at this time would have nothing done to enlighten us further as to her condition, and we were forced to allow her to go home without a diagnosis, except the tentative one of a possible malignancy (which was told her husband), this view being considered tenable because of her loss of weight, the persistence of symptoms of gastric type and origin, and the Roentgen findings Against that was the length of time she had these or similar attacks, five or six years and even more, her practically normal blood picture, and her apparent improvement under rest and massage and frequent small meals The second time she was seen in bed, the facies drawn and the skin slightly wrinkled, she appeared anemic, more so than the blood count seemed to warrant, though with the concentration of the blood, because of a slow circulation and lessened fluid intake, the blood picture was somewhat misleading There was a marked prominence of the abdomen, owing to the pressure of gas in the intestines and fluid free in the abdomen The eyes and ears were normal, the teeth in excellent condition and the nose and fauces normal The limbs were rather thin, and the musculature was flabby This was in striking contrast to her former perfect physical development The examination of the chest revealed nothing in the respiratory apparatus, the heart was in the normal position, the heart sounds were normal, the rhythm was normal except during attacks of distention when the pressure of gas in the bowels and stomach caused the heart to "flutter" The girth of the abdomen was increased, no mass was palpable, but fluid fluctuation could be elicited with a shifting dulness with changes in position On Roentgen examination at this time the stomach emptied in ten minutes and appeared as a small shrunken tubelike organ, high up in the abdomen

Though no tumor mass could be found, there was a resistance on palpation in the upper abdomen extending across just above the umbilicus, with tenderness over all the epigastrium with a gurgling which seemed to stop about the hepatic flexure of the large intestine, though we could not determine definitely that the delay of feces and gas occurred in the large intestine The patient entered the hospital June 5, 1914 The temperature varied from 95 6 F on entrance to 99 before operation, and the pulse from 88 to 100 The urine was slightly cloudy, amber, acid, specific gravity 1 008, no sugar, a slight trace of albumin, few pus cells, few epithelial cells, no casts, and no blood The Wassermann reaction was negative The blood examination revealed red cells, 4,250,000, hemoglobin, 87 per cent , white cells, 11,000 Blood pressure was 119 mm Hg On gastric analysis, hydrochloric acid was absent Lactic acid was present There were no Boas-Oppler bacilli The digestion appeared to be disturbed not so much by the character of the food as by any large quantity There was no occult blood in the stools

Operation and Result—At operation the stomach appeared to all observers to be involved in a malignant growth, the omentum being shrunken and shortened and the glands large and hard The transverse colon was a thick hard tube, rigid and unyielding There was much fluid free in the abdomen no growth resulted on culture from the fluid The cecum and ascending colon to the hepatic flexure were normal, and the descending colon and sigmoid and rectum were not involved in the disease No area large enough was found for making a gastro-enterostomy, and the patient's condition did not warrant a resection of the stomach and transverse colon The abdomen was closed and a few days later a shortcircuiting operation was to be made, but the patient was so distended with gas by this time, the obstruction at the hepatic flexure having become acute, that a cecostomy was done to relieve the obstructive symptoms with a cecosigmoidostomy to be later added to shortcircuit the diseased transverse colon, but the patient succumbed within two days

Microscopic specimens showed, after many serial sections, a muscle wall studded with cancer cells, the malignant cells lying thickly between the muscle fibers The mucosa was not much altered, and the serosa only slightly thickened. From the microscopic findings, the diagnosis of scirrhous cancer of the stomach was made. The transverse colon showed grossly the same changes as the stomach, being an irregularly contracted tube with thick unyielding walls, the caliber barely enough to admit the middle finger

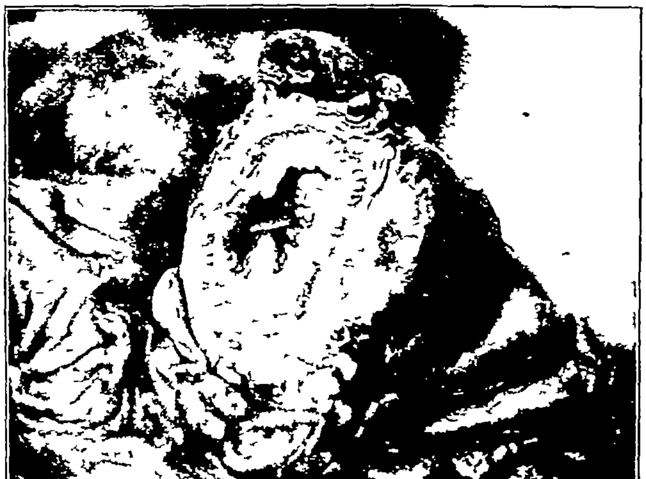

Fig 3 —Thickening of wall of transverse colon at hepatic flexure

COMMENT

Differentiation must be made from the usual and unusual disorders causing or associated with gastric disturbances constitutional disorders, renal, cardiac, respiratory, hepatic and blood diseases Also consideration must be given to other conditions which may give pain in a similar location, or even definite gastric symptoms, such as tabes, spinal disease, syphilis, abdominal arteriosclerosis, thoracic or abdominal aneurysm, plumbism and herpes zoster

Differentiation from a syphilitic stomach must be made As already mentioned, the syphilitic stomach is seen in younger patients, as a rule The history, while similar in some respects, may or will differ in a positive history of some of the symptoms of syphilis, primary or secondary A Wassermann test will show the true status (if repeated) in the acquired type A history of hydrocephalus or other abnormal development, the teeth, adenopathy, etc, will serve to lead to the proper diagnosis in the congenital type Roentgenoscopy will not furnish much help, for the appearance of a syphilitic stomach is very similar to a leather-bottle stomach, and the improvement in the general health under antisyphilitic treatment, with the restoration to normal of the stomach function and contour, will be convincing

DIAGNOSIS

In patients from the third and fourth decade and on, there is an extended history of digestive disturbances without the typical ulcer or malignant symptoms, the latter are usually delayed till later Or there is an abrupt onset of marked symptoms of gastric origin and type, sometimes the patient dating perfectly the onset of distress to the day, and occasionally to the hour

If seen late, the patient is unable to take a full meal, and the amount of food found after a test meal is very small, sometimes none after from ten to twenty-five minutes The hypochlorhydria or achlorhydria are not distinctive of this any more than in the more rapid forms of malignancy, if as much so, as it may be due to a true carcinoma or achylia gastrica

The screen and plates will show, late in the disease, and most of these patients come late, whether the onset is slow or abrupt, the diminished size, the thickened and unyielding wall of the stomach and even the colon, when involved The bismuth meal runs rapidly through the thickened tubelike stomach In our case it required only eight or ten minutes for the stomach to be completely empty

The usual annular deformity of the carcinoma of the pylorus, or the irregular indented outline of the carcinoma of the body are wanting

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Delirium and Convulsions After Neosalvarsan—Langevin's patient had been given for four weeks an intravenous injection of a mercury salt five days of the week, the sixth day neosalvarsan was injected, the doses increasing from 0 15 to 0 6 gm in the four doses that had been given Convulsions, unconsciousness and delirium developed three days after the fourth dose The clinical picture was exactly like that of the serous apoplexy which has been known to develop under salvarsan and to subside under epinephrin treatment The delirium was of the delirium tremens type, coming on as the young man came out from the coma, and keeping up for several days Venesection was done at once after which there were no further convulsions During the four days of coma a quart of boiled water was injected slowly into the intestine every hour, and the man recovered The case was published in the *Bull et mem Soc med hôp de Paris*, 1916, p 647

THE EFFECT OF ACTIVITY ON THE HISTOLOGIC STRUCTURE OF NERVE CELLS *

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It has long been known that prolonged activity of mucous gland cells results in characteristic histologic changes in these cells, owing to the disappearance from the cell of certain granules (zymogen granules) This granular material is evidently used to make organic material of the secretion It was doubtless on the basis of such observations that certain physiologists were led to seek for similar alterations in the highly specialized nerve cell following functional activity Many of the investigations of these physiologists were confined to one or two experiments, the material was often not sufficiently controlled by normal tissue for comparison, and frequently the histologic technic was faulty

There is the utmost divergence of opinion as to the nature of the changes taking place in nerve cells following activity, and one who tries to correlate the findings of the different workers in this field is utterly confused The chief findings relate to (*a*) size of cell body and nucleus, and (*b*) amount and distribution of chromatic material While one group of workers concludes that fatigue results in decrease in the size of cell and nucleus (Hodge, Van Durme, Legendre), another group finds an increase in the size or change in the nucleus plasma relation Lambert noted no change in the size of cell or nucleus Increase in chromatic substance (hyperchromatism) as the chief result of fatigue has been noted by Nissl Most workers, Van Durmé, Vas Lugaro and Mann, have described a decrease in chromatic material as the result of exercise Dolley tried to reconcile these contradictions by regarding the hyperchromatism as a result of moderate activity, and the hypochromatism the result of excessive activity or exhaustion He found that both stages may be found in the same animal simultaneously Other changes, such as wandering of the nucleus toward the periphery of the cell, rupture of the nuclear and cell membranes (karolysis and karyorhexis) have been described Dolley noted thirteen stages of cell change from the hyperchromatism to disintegration or death of the cell, corresponding to the degrees of moderate activity up to complete exhaustion Such divergence in the results is not so surprising when we stop to consider the complicating factors necessarily attending these experiments, such as (1) difficulty of separating the effects of normal activity from unavoidable shock or injury to the nervous system in killing the animal (the nervous system does not "die" as soon as the heart stops beating), (2) postmortem changes ensuing between the time of death and complete penetration of the tissue by the fixing agent owing to the action of autolytic enzymes present in all tissue, (3) varying chemical action of fixing agents, for example, formaldehyd coagulates protein by combination with the amino groups, alcohol by dehydration, sublimate by formation of salts, etc, (4) the solvent action of materials used in fixation and in embedding, for example, alcohol, xylene, paraffin, (5) varying effects of chemical reaction between basic or acid dyes used in staining and the different cell structures, and (6) effect of subjecting tissue to temperatures of from 50 to 54 C (122 to 129 2 F) in the paraffin oven for a period of several hours

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* The data and other details of these experiments will be reported shortly in the Journal of Comparative Neurology

I have studied the effect of various grades of activity on nerve cells in a *series of fifteen separate experiments* The animals used were dogs, cats, pigeons, sparrows, frogs and rats Every experiment was carefully controlled by a resting animal of the same species, of the same approximate age and size, and the material from the two given identical treatment, except for the activity The nerve cells studied were from the cruciate gyrus, from the cerebellum and the anterior horn of the spinal cord, and from the dorsal ganglia In one of the experiments, over 3,500 nerve cells, classified into thirteen types according to the histologic characters, were counted to determine the relative frequency of characteristics which might be correlated with grades of activity

In this series of experiments I attempted as much as possible to minimize the formation of artefacts, having in mind the above mentioned considerations It was hoped that by using special care in the handling of material, the use of improved technic in fixation and staining by varying the kind and degree of activity in a long series of experiments, using different animals and studying various kinds of nerve cells, some degree of uniformity of results might be obtained A resting control animal was used in each experiment The animals were killed in most cases by bleeding after ether anesthesia, the nerve material removed as quickly as possible, cut into small pieces, and the control and fatigue specimens placed in the same fixing solution, embedded side by side in the same block of paraffin, cut with the same stroke of the knife, mounted and stained together on the same slide In all fifteen experiments were performed A great many forms of activity were used, normal activity, forced activity, activity resulting from electric stimulation, both faradic and galvanic, chemical stimulation, and shock being applied in the experiments The microscopic technic used was varied considerably, not only as to the fixative but also as to staining fluid The stain most frequently used was Held's modification of Nissl's method

The examination of the material for comparison was facilitated by having both control and fatigue specimens mounted on the same slide Changes such as have been previously described as resulting from fatigue were carefully examined for comparative amounts and distribution of chromatic substance, size of granules, nucleus plasma relation, relative size of cells and nuclei, etc In order to determine whether any change in the size of the cell had resulted from activity, a large series of camera lucida drawings was made These drawings were made of cells without selection A field was taken, and every cell showing a nucleolus was included This precaution was necessary in order to be assured that the cell was cut through the center Cells were first drawn, a low power for orientation being used, each cell numbered on the paper, then the one-sixth or the one-twelfth objective was used to project the cell, care being taken to draw always at the same distance from the microscope Over a thousand cells and nuclei were measured by computing the areas of the projected outline with the planimeter

CONCLUSIONS

There could be found no constant difference in the size of the nerve cells or nuclei resulting from activity An apparent difference in size which appeared here and there on counting a small number of cells was shown on enlarging the series to be counterbalanced by a similar variation on the part of the controls Hence it must be concluded that any difference in size of cells found was within the limits of normal variation

Furthermore, in no experiment did the histologic structure of the nerve cell following activity, even to the point of exhaustion, show any constant deviation from that of the corresponding resting cells of the controls

Some very sweeping generalizations have been drawn from the conclusions of previous workers, namely, that fatigue, fear, shock and exhaustion may lead to permanent damage and even disintegration of nerve cells Crile's present theory of surgical shock and of certain aspects of exophthalmic goiter, based essentially on these assumptions, may be cited to show to what extremes these deductions have led

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THE NATURE, MANNER OF CONVEYANCE AND MEANS OF PREVENTION OF INFANTILE PARALYSIS *

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NEW YORK

The Rockefeller Institute for Medical Research has been appealed to by so many physicians and laymen for information and advice on the subject of infantile paralysis that it has seemed desirable to relate the facts of present knowledge concerning certain highly pertinent aspects of the disease, together with deductions of practical importance derived from them

Nature—Infantile paralysis is an infectious and communicable disease which is caused by the invasion of the central nervous organs—the spinal cord and brain—of a minute, filterable micro-organism which has now been secured in artificial culture and as such is distinctly visible under the higher powers of the microscope

Location of the Micro-Organism or Virus in the Sick—The virus of infantile paralysis, as the micro-organism causing it is termed, exists constantly in the central nervous organs and on the mucous membrane of the nose and throat and of the intestines in persons suffering from the disease, it occurs less frequently in the other internal organs, and it has not been detected in the general circulating blood of patients

Location of the Virus in Healthy Persons—Although the micro-organism of infantile paralysis is now known, the difficulties attending its artificial cultivation and identification under the microscope are such as to make futile the employment of ordinary bacteriologic tests for its detection Nevertheless, the virus can be detected by inoculation tests on monkeys, which animals develop a disease corresponding to infantile paralysis in human beings In this manner the fact has been determined that the mucous membrane of the nose and throat of healthy persons who have been in intimate contact with acute cases of infantile paralysis may become contaminated with the virus, and that such contaminated persons, without falling ill themselves, may convey the infection to other persons, chiefly children, who develop the disease

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* Presented to the New York Academy of Medicine, July 13 1916

Relation of Virus to Types of the Disease—The virus has, apparently, an identical distribution irrespective of the types or severity of cases of infantile paralysis Whether the cases correspond with the so-called abortive forms of the disease in which definite paralysis of the muscles does not occur at all, or is so slight and fleeting as often to escape detection, whether they correspond with the meningeal forms in which the symptoms resemble those of acute meningitis with which muscular paralysis may or may not be associated, or whether they consist of the familiar paralytic condition, the virus is present not only within the nervous organs, but also on the mucous membranes of the nose, throat and intestines

Escape of the Virus from the Body—Microorganisms which convey disease escape from the body of an infected individual in a manner enabling them to enter and multiply within fresh or uninfected individuals in such a manner as to cause further disease The virus of infantile paralysis is known to leave the infected human body in the secretions of the nose, throat and intestines It also escapes from contaminated healthy persons in the secretions of the nose and throat Whether it ever leaves the infected body in other ways is unknown At one time certain experiments seemed to show that biting insects, and particularly the stable fly, might withdraw the virus from the blood of infected persons and inoculate it into the blood of healthy persons But as the virus has never been detected in the blood of human beings, and later experiments with the stable fly have not confirmed the earlier ones, this means of escape of the virus must be considered doubtful On the other hand, it has been shown by experiments on animals, so that the same facts should be regarded as applicable to human beings, that the virus seeks to escape from the body by way of the nose and throat, not only when inoculation takes place through these membranes, but also when the inoculation is experimentally made into the abdominal cavity, the blood, or the brain itself From this it is concluded that the usual means of escape of the virus is by way of the ordinary secretions of the nose and throat and, after swallowing these, with the discharges of the intestines

Entrance of the Virus into the Body—The virus enters the body, as a rule if not exclusively, by way of the mucous membrane of the nose and throat Having gained entrance to those easily accessible parts of the body, multiplication of the virus occurs there, after which it penetrates to the brain and spinal cord by way of the lymphatic channels which connect the upper nasal mucous membranes with the interior of the skull Whether the virus ever enters the body in any other way is unknown Certain experiments already referred to make it possible that it may be inoculated into the blood by insects, and other experiments have shown that under peculiar and extraordinary conditions, it may in monkeys enter through the intestines But while the latter two modes of infection may operate sometimes, observations in human cases of infantile paralysis and on animals all indicate that the main avenue of entrance of the virus into the body is by way of the upper respiratory mucous membrane, that is, the membrane of the nose and throat

Resistance of the Virus—The physical properties of the virus of infantile paralysis adapt it well for conveyance to the nose and throat Being contained in their secretions, it is readily distributed by coughing, sneezing, kissing, and by means of fingers and articles contaminated with these secretions, as well as with the intestinal discharges Moreover, as the virus is thrown off from the body mingled with the secretions, it withstands for a long time even the highest summer temperatures, complete drying, and even the action of weak chemicals, such as glycerin and phenol (carbolic acid), which destroys ordinary bacteria Hence mere drying of the secretions is no protection, on the contrary, as the dried secretions may be converted into dust which is breathed into the nose and throat, they become a potential source of infection The survival of the virus in the secretions is favored by weak daylight and darkness, and hindered by bright daylight and sunshine It is readily destroyed by exposure to sunlight

Conveyance by Insects—Since epidemics of infantile paralysis always arise during the period of warm or summer weather, they have been thought of as possibly being connected with or dependent on insect life The blood-sucking insects have especially come under suspicion Experiments have been made with biting flies, bedbugs, mosquitoes, and with lice Neither mosquitoes nor lice seem able to take the virus from the blood of infected monkeys or to retain it for a time in a living state In one instance, bedbugs have been made to take up the virus from the blood of monkeys, but they did not convey it by biting to healthy monkeys Certain experiments did indicate that the biting stable fly could both withdraw the virus from the blood of infected and reconvey it to the blood of healthy monkeys, which became paralyzed But more recent studies have failed to confirm the earlier ones Moreover, experimentally inoculated monkeys differ in one way from human beings suffering from infantile paralysis, for while the virus may appear in the blood of the former, it has never been detected in the blood of the latter The ordinary or domestic fly may become contaminated with the virus contained in the secretions of the body and serve as the agent of its transportation to persons and to food with which it comes into contact Domestic flies experimentally contaminated with the virus remain infective for forty-eight hours or longer While our present knowledge excludes insects from being active agents in the dissemination of infantile paralysis, they nevertheless fall under suspicion as being potential mechanical carriers of the virus of that disease

Conveyance by Domestic Animals—The attention which the recent epidemic of infantile paralysis has drawn to the diseases attended by paralysis has led to the discovery that domestic animals and pets are subject to paralytic diseases The animals which have especially come under suspicion as possibly distributing the germ of infantile paralysis are poultry, pigs, and dogs and cats But in isolated instances, sheep, cattle and even horses have been suspected All these kinds of animals are subject to diseases in which paralysis of the legs and other parts of the body sometimes appear In not a few instances, paralytic distemper among poultry or pigs have been noted to coincide with the appearance of cases of infantile paralysis on a farm or in a community Experimental studies have, however, excluded the above-mentioned animals from being carriers of the virus of infantile paralysis. The paralytic diseases which they suffer have long been known and are quite different from infantile paralysis. Their occurrence may be coincidental, in no instance investigated has one been found to be responsible for the other.

Routes of Travel.—Studies carried out in various countries in which infantile paralysis has been epidemic all indicate that, in extending from place to place or point to point, the route taken is that of ordinary travel. This is equally true whether the route is by water or land, along a simple highway or the line of a railroad. In other words, the evidence derived from this class of studies confirms the evidence obtained from other sources in connecting the distributing agency intimately with human beings and their activities.

Survival of the Virus in the Infected Body.—The virus of infantile paralysis is destroyed in the interior of the body more quickly and completely than, in some instances, in the mucous membrane of the nose and throat. It has been found in monkeys, in which accurate experiments can be carried out, that the virus may disappear from the brain and spinal cord within from a few days to three weeks after the appearance of the paralysis, while at the same time it is still present on the mucous membranes mentioned. The longest period after inoculation in which the virus has been detected in the mucous membrane of the nose and throat of monkeys is six months. It is far more difficult to detect the human than the monkey carriers of the virus since, as directly obtained from human beings, the virus displays a low degree of infectivity for monkeys, while once adapted to monkeys, the virus becomes incredibly active, so that minute quantities are capable of ready detection by inoculation tests. Yet in an undoubted instance of the human disease, the virus was detected in the mucous membrane of the throat five months after its acute onset. Hence we possess conclusive evidence of the occurrence of occasional chronic human carriers of the virus of infantile paralysis.

Fluctuation in Epidemics.—Not all epidemics of infantile paralysis are equally severe. Indeed, great variations or fluctuations are known to occur not only in the number of cases, but also in the death rate. The extremes are represented by the occasional instances of infantile paralysis known in every considerable community and from which no extension takes place, and the instances in which in a few days or weeks the number of cases rises by leaps and bounds into the hundreds, and the death rate reaches 20 per cent or more of those attacked. While all the factors which determine this discrepancy are not known, certain of them have become apparent. A factor of high importance is the infective power or potency, or, technically stated, the virulence, of the micro-organism or virus causing the disease. This virus is subject to fluctuations of intensity which can best be illustrated by an example. The virus as ordinarily present in human beings even during severe epidemics has low infective power for monkeys. But by passing it from monkey to monkey, it tends to acquire after a variable number of such passages an incredible activity. However, occasional samples of the human virus refuse to be thus intensified. But once rendered highly potent, the virus may be passed from monkey to monkey through a long but not indefinite series. Finally, in some samples of the virus at least a reverse change takes place—the virus begins to lose its virulence until it returns to the original or even to a diminished degree of infective power. In this respect the behavior of the virus corresponds to the onset, rise and then the fall in number and severity of cases as observed in the course of epidemics of infantile paralysis and other epidemic diseases. Hence either a new active specimen of the virus may be introduced from without which, after a certain number of passages from person to person, acquires a high potency, or a specimen of virus already present and left over from a previous epidemic after a resting period and similar passages again becomes active, and reaches an infective power which equals or even exceeds that originally possessed. Another but more indefinite factor relates to the degree of susceptibility among children and others affected, which at one period may be greater or less than at another.

Varying Individual Susceptibilities.—Not all children and relatively few adults are susceptible to infantile paralysis. Young children are more susceptible, generally speaking, than older ones, but no age can be said to be absolutely insusceptible. When several children exist in a family or in a group, one or more may be affected, while the others escape or seem to escape. The closer the family or other groups are studied by physicians, the more numerous it now appears are the number of cases among them. This means that the term "infantile paralysis" is a misnomer, since the disease arises without causing any paralysis whatever, or such slight and fleeting paralysis as to be difficult of detection. The light or abortive cases, as they are called, indicate a greater general susceptibility than has always been recognized, and their discovery promises to have far reaching consequences in respect to the means employed to limit the spread or eradicate foci of the disease.

Period of Incubation.—Like all other infectious diseases, infantile paralysis does not arise at once after exposure, but only after an intervening lapse of time called the period of incubation. This period is subject to wide limits of fluctuation in certain instances it has been as short as two days, in others it has been two weeks or possibly even longer. But the usual period does not exceed about eight days.

Period of Infectivity.—Probably the period at which the danger of communication is greatest is during the very early and acute stage of the disease. This statement must be made tentatively since it depends on inference, based on general knowledge of infection, rather than on demonstration. Judging from experiments on animals, the virus tends not to persist in the body longer than four or five weeks, except in those exceptional instances in which chronic carriage is developed. Hence cases of infantile paralysis which have been kept under supervision for a period of six weeks from the onset of the symptoms may be regarded as practically free of danger.

Protection by Previous Attack.—Infantile paralysis is one of the infectious diseases in which insusceptibility is conferred by one attack. The evidence derived from experiments on monkeys is conclusive in showing that an infection which ends in recovery gives protection from a subsequent inoculation. Observations on human beings have brought out the same fact, which appears to be generally true, and to include all the forms of infantile paralysis, namely, the paralytic, meningeal or abortive, which all confer immunity.

Basis of the Immunity.—The blood of normal persons and monkeys is not capable of destroying or neutralizing the effect of the virus of infantile paralysis The blood of persons or monkeys who have recovered from the disease is capable of destroying or neutralizing the effect of the virus The insusceptibility or immunity to subsequent infection, whether occurring in human beings after exposure or monkeys after inoculation, rests on the presence of the destroying substances, the so-called immunity bodies, which arise in the internal organs and are yielded to the blood So long as these immunity bodies persist in the body, protection is afforded, and their presence has been detected twenty years or even longer after recovery from infantile paralysis Experiments have seemed to show that the immunity bodies appear in the blood in the course of even the mildest attack of the disease, which fact explains why protection is afforded irrespective of the severity of the case

Active Immunization—Protection has been afforded monkeys against inoculation with effective quantities of the virus of infantile paralysis by previously subjecting them to inoculation with subeffective quantities or doses of the virus By this means and without any evident illness or effect of the protective inoculation, complete immunity has been achieved But the method is not perfect, since in certain instances not only was immunity not obtained, but unexpected paralysis intervened In the instances in which protection was accomplished, the immunity bodies appeared in the blood

Passive Protection—By transferring the blood of immune monkeys to normal or untreated ones, they can be rendered insusceptible or immune, and the immunity will endure for a relatively short period during which the passively transferred immunity bodies persist The accomplishment of passive immunization is somewhat uncertain, and its brief duration renders it useless for purposes of protective immunization

Serum Treatment—On the other hand, a measure of success has been achieved in the experimental serum treatment of inoculated monkeys For this purpose blood serum derived either from recovered and protected monkeys or human beings has been employed The serum is injected into the membranes about the spinal cord, and the virus is inoculated into the brain The injection of serum must be repeated several times in order to be effective Use of this method has been made in a few instances in France, where the blood serum derived from persons who had recovered from infantile paralysis has been injected into the spinal membranes of persons who have just become paralyzed The results are said to be promising Unfortunately, the quantity of the human immune serum is very limited, and no other animals than monkeys seem capable of yielding an immune serum, and the monkey is not a practicable animal from which to obtain supplies

Drug Treatment—The virus of infantile paralysis attacks and attaches itself to the central nervous organs Hence it is not only reached with difficulty because nature has carefully protected those sensitive organs from injurious materials which may gain access to the blood, but it must also be counteracted by substances and in a manner that will not themselves injure those sensitive parts The ideal means to accomplish this purpose is through the employment of an immune serum, since serums are among the least injurious therapeutic agents The only drug which has shown any useful degree of activity is hexamethylenamin, which is itself germicidal, and has the merit of entering the membranes, as well as the substance of the spinal cord or brain in which the virus is deposited But experiments on monkeys have shown this chemical to be effective only very early in the course of the inoculation and only in a part of the animals treated Efforts to modify and improve this drug by chemical means have up to the present been only partially successful The experiments have *not* yet reached the point at which the drugs are applicable to the treatment of human cases of infantile paralysis

PRACTICAL DEDUCTIONS AND APPLICATIONS

1 The chief mode of demonstrated conveyance of the virus is through the agency of human beings Whether or not still other modes of dissemination exist is unknown According to our present knowledge, the virus leaves the body in the secretions of the nose and throat and in the discharges from the intestines The conveyers of the virus include persons ill of infantile paralysis in any of its several forms and irrespective of whether they are paralyzed or not, and such healthy persons who may have become contaminated by attendance on or association with the ill How numerous the latter class *may* be is unknown But all attendants on or associates of the sick are suspect These healthy carriers rarely themselves fall ill of the disease, they may, however, be the source of infection in others On the other hand, the fact that infantile paralysis is very rarely communicated in general hospitals to other persons, whether doctors, nurses or patients, indicates that its spread is subject to ready control under restricted and supervised sanitary conditions

2 The chief means by which the secretions of the nose and throat are disseminated is through the act of kissing, spitting, coughing or sneezing Hence, during the prevalence of an epidemic of infantile paralysis, care should be exercised to restrict the distribution as far as possible through these common means Habits of self-denial, care, and cleanliness and consideration for the public welfare can be made to go very far in limiting the dangers from these sources

Moreover, since the disease attacks by preference young children and infants, in whom the secretions from the nose and mouth are wiped away by mother or nurse, the fingers of these persons readily become contaminated Through attention on other children or the preparation of food which may be contaminated, the virus may thus be conveyed from the sick to the healthy The conditions which obtain in a household in which a mother waits on the sick child and attends the other children are directly contrasted with those existing in a well ordered hospital the one is a menace, the other a protection to the community Moreover, in homes the practice of carrying small children about and comforting them is the rule, through which not only the hands, but other parts of the body and the clothing of parents may become contaminated

3 Flies also often collect about the nose and mouth of patients ill of infantile paralysis and feed on the secretions, and they even gain access to the discharges from the intestines in homes unprotected by screens This fact relates to the domestic fly, which, becoming grossly contaminated with the virus, may deposit it on the nose and mouth of healthy persons, or on food or eating utensils To what extent the biting stable fly is to be incriminated as a carrier of infection is doubtful, but we already know enough to wish to exclude from the sick, and hence from menacing the well, all objectionable household insects

Food exposed to sale may become contaminated by flies or from fingers which have been in contact with secretions containing the virus, hence food should not be exposed in shops, and no person in attendance on a case of infantile paralysis should be permitted to handle food for sale to the general public

4 Protection to the public can best be secured through the discovery and isolation of those ill of the disease, and the sanitary control of those persons who have associated with the sick and where business calls them away from home Both these conditions can be secured without too great interference with the comforts and the rights of individuals

In the first place, where homes are not suited to the care of the ill so that other children in the same or adjacent families are exposed, the parent should consent to removal to hospital in the interest of the sick child itself, as well as in the interest of other children But this removal or care must include not only the frankly paralyzed cases, but also the other forms of the disease In the case of doubtful diagnosis, the aid of the laboratory is to be sought, since even in the mildest cases changes will be detected in the cerebrospinal fluid removed by lumbar puncture If the effort is to be made to control the disease by isolation and segregation of the ill, then these means must be made as inclusive as possible It is obvious that in certain homes isolation can be carried out as effectively as in hospitals

But what has been said of the small incidence of cases of the disease among the hospital personnel, and those with whom they come into contact, indicates the extent to which personal care of the body by adults and responsible people can diminish the menace which those accidentally or unavoidably in contact with the ill are to the community Care exercised not to scatter the secretions of the nose and throat by spitting, coughing and sneezing, the free use of clean handkerchiefs, cleanliness in habits affecting especially the hands and face, changes of clothes, etc, should all act to diminish this danger But in the end, the early detection and isolation of the cases of infantile paralysis in all of its forms, with the attendant control of the households from which they come, will have to be relied on as the chief measure of staying the progress of the epidemic

5 The degree of susceptibility of children and other members of the community to infantile paralysis is relatively small and is definitely lower than to such communicable diseases as measles, scarlet fever and diphtheria This fact in itself constitutes a measure of control, and while it does not justify the abatement of any practicable means which may be employed to limit and suppress the epidemic, it should tend to prevent a state of overanxiety and panic from taking hold of the community

6 A percentage of persons, children particularly, die during the acute stage of the disease This percentage varies from five in certain severe epidemics to twenty in others The average death rate of many epidemics has been below 10 per cent A reported high death rate may not be actual, but only apparent, since in every instance the death will be recorded, while many patients who recover may not be reported at all to the authorities In the present instance it is too early in the course of the epidemic to calculate the death rate, which may prove to be considerably lower than it now seems to be

7 Of those who survive, a part make complete recoveries, in which no crippling whatever remains This number is greater than is usually supposed, because it includes not only the relatively large number of slight or abortive cases, but also a considerable number of cases in which more or less of paralysis was present at one time The disappearance of the paralysis may be rapid or gradual—may be complete in a few days or may require several weeks or months

The remainder, and unfortunately not a small number, suffer some degree of permanent crippling But even in this class, the extent to which recovery from the paralysis may occur is very great In many instances the residue of paralysis may be so small as not seriously to hamper the life activities of the individual, in others in whom it is greater, it may be relieved or minimized by suitable orthopedic treatment But what it is imperative to keep in mind is that the recovery of paralyzed parts and the restoration of lost muscular power and function is a process which extends over a long period of time — that is, over months and even years So that even a severely paralyzed child who has made little recovery of function by the time the acute stage of the disease is over, may go on gaining for weeks, months and even years, until in the end he has regained a large part of his losses Fortunately, only a very small number of the attacked are left severely and helplessly crippled Lamentable as it is that even one should be so affected, it is nevertheless a reassurance to know that so many recover altogether, and that so much of what appears to be permanent paralysis disappears in time

There exists at present no safe method of preventive inoculation or vaccination, and no practicable method of specific treatment The prevention of the disease must be accomplished through general sanitary means, recovery from the disease is a spontaneous process which can be greatly assisted by proper medical and surgical care Infantile paralysis is an infectious disease, due to a definite and specific micro-organism or virus, recovery is accomplished by a process of immunization which takes place during the acute period of the disease The tendency of the disease is toward recovery, and it is chiefly or only because the paralysis in some instances involves those portions of the brain and spinal cord which control respiration or breathing and the heart action that death results

Finally, it should be added that not since 1907, at which time the great epidemic of infantile paralysis of poliomyelitis appeared in this country, has the country or this state or city been free of the disease Each summer since has seen some degree of accession in the number of cases, the rapid rise in the number of cases this year probably exceeds that of any previous year But it must be remembered that in 1908, several thousand cases occurred in the greater city — possibly indeed many cases of and deaths due to the disease were never reported as such Hence the present experience, severe and serious as it is, is not something new, the disease has been severely epidemic before and was brought under control The knowledge regarding it now is far greater than it was in 1908, and the forces of the city which are dealing with the epidemic are probably better organized and in more general cooperation than ever before The outlook, therefore, should not be regarded as discouraging

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Dependability—A drug-taking nation is no stronger than a drug-taking man, and a drug-taking man is not very dependable, either in the factory or on the firing line—*Health Letter*, Life Extension Institute.

Therapeutics

HEAT EXHAUSTION

The two conditions due to excessive heat, heat exhaustion and sunstroke, vary in their pathology and symptomatology Heat exhaustion is a condition resulting from prolonged or continuous exposure to indoor heat or to the heat from the sun without direct exposure to the sun's rays It occurs commonly in engine and furnace rooms, particularly among stokers on ocean steamers, and in foundries On hot summer days it may even befall those remaining indoors in hot and poorly ventilated rooms

SYMPTOMS

Heat exhaustion is an asthenic condition, and the symptoms are those of depression It often results in collapse due to circulatory failure Not only is there a congestion of blood in the splanchnic vessels with a corresponding depletion of the vessels in the brain and periphery, but also the excessive loss of fluids from the body by way of perspiration causes an increase in the viscosity of the blood There result vertigo, pallor, at first faintness and weakness, and then prostration, the patient becoming semiconscious or losing consciousness altogether The hands become clammy, cold perspiration may be present, and the body feels cold The pulse becomes small and feeble, and the heart action is poor and weak Often the condition is not allowed to proceed so far, and there are present only the weakness and faintness With this may also be associated irritability, restlessness and sleeplessness Occasionally there is delirium In heat exhaustion there is hypothermia, the temperature falling as low as 95

TREATMENT

In treating heat exhaustion it must be remembered that there is a depressed and hypothermic condition Stimulants are indicated, perhaps best as caffein or coffee Camphor, strychnin and digitalis preparations may be given hypodermically if indicated If the heart is weak, a hypodermic injection of 1/1000 grain of atropin sulphate is good treatment Friction of the extremities, and even dry heat may be advisable The ice bath is absolutely contraindicated in this condition, as a subnormal temperature already exists A warm bath will be better tolerated

SUNSTROKE

In sunstroke the symptoms are due to causes different from those in heat exhaustion Besides the action of the prolonged high temperature, it is probable that there is some direct action of the rays themselves In this condition there is a congestion of the blood vessels of the cerebrospinal system and the periphery This is caused by the effect of the heat directly on the brain There may be premonitory symptoms, such as headache, restlessness, malaise, nausea, extreme thirst, rapid, shallow breathing, vomiting, and occasionally diarrhea There also may be frequent micturition, and a hot, dry skin If the exposure to the sun is continued, the symptoms are aggravated, and with them the face becomes flushed, the pulse full and frequent, and the breathing labored The temperature may rise to 108, and even to 112 and 113 F

The pupils are contracted, but become dilated preceding death Symptoms of cerebral congestion and disturbance of the cerebrospinal centers also manifest themselves Twitching the muscles occurs, and often epileptiform convulsions Later there may result paralysis of the respiratory center Preceding death there usually is suppression of the urine Should there be recovery from a severe sunstroke, there may follow partial or complete paralysis, deafness, disturbance of vision or blindness, constant headaches, or dementia

Lian[1] reports three atypical cases in all of which there were signs of meningeal irritation and lumbar puncture showed the cerebrospinal fluid to be under marked pressure In one case there was only stupor, and in a second, sudden and acute dilatation of the heart with extreme arrhythmia

TREATMENT

In sunstroke there will have to be combated the plethoric condition of the veins both at the periphery and in the cerebrospinal system Besides this an attempt must be made to reduce the high temperature The subject of the sunstroke should be brought to a cool, shady place, and the clothing loosened or removed If there is poor respiration, artificial respiration should be resorted to It must be cautiously done so as not to encourage possible cerebral hemorrhage In cases of marked plethora, Grober[2] advises venesection, with the withdrawal of from 250 to 400 c c of blood This will also be of assistance in warding off edema of the brain, and when asphyxia due to stagnation of the blood in the lungs has persisted for more than two hours [3]

For the reduction of the temperature there should be tried a cold bath to which ice is added, or cool effusions An ice cap should be constantly on the head Friction of the body with pieces of ice will also be found useful This should be continued until the temperature has fallen to at least 102 Often stimuli direct to the naked skin will be of service This may be done by sprinkling the naked trunk with cold water, fanning the body, or by squirting cold carbonated water from a bottle on the body Cold water enemas may also be tried

Antipyretics aid in the attempt to reduce the temperature, but they should be used with discretion, and the heart should be carefully watched The antipyretics that are best are antipyrin or acetphenetidin These, with the cold water applications, should be continued as long as the high temperature persists

To aid in the reduction of the cerebral pressure, lumbar puncture should be done For convulsions or delirium, small doses of some sedative, such as chloral or the bromids, may be used

AFTER-TREATMENT

The after-treatment of sunstroke or heat exhaustion is very important Symptoms of the attack may persist for a long time The patient should avoid all hot places, particularly those where he would be exposed to the sun If his condition warrants it, he should bathe frequently in cool or cold water If there is insomnia, veronal-sodium (sodium diethyl-barbiturate) or chloral may be given A tonic containing strychnin can also be given Alcoholic drinks should be avoided There may be some loss of memory, such as forgetfulness, and headache, or irritability These, however, usually disappear Occasionally, when the sunstroke has been of an unusually severe character, there may remain permanently signs of brain injury, such as impaired memory, dementia, mania, epilepsy or partial paralysis

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[1] Lian Presse med, 1915, xxiii, 556

[2] Grober Deutsch med Wchnschr 1914, xl 1

[3] Hiller Deutsch med Wchnschr, 1913, xxxix, 1183

HEAT COLLAPSE

A common condition from exposure to the sun, very often seen on hot summer days, is *heat collapse* This is often called sunstroke, but it is too transient and mild for sunstroke It is due to a short exposure to the heat of the sun's rays There may be a transient unconsciousness, the temperature is normal or slightly elevated, and the respiration shallow and rapid

Treatment consists in removing the patient to a cool or shady place, loosening the clothing, and spraying the face and body with cold water He should be given a cup of strong tea or coffee A hypodermic injection of strychnin or camphor may be needed

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ANTITYPHOID VACCINATION

The military experience of the past two years has tended to confirm the conclusions previously derived from army and hospital statistics during times of peace, concerning the value of antityphoid vaccination as a protective measure against typhoid fever It has been urged by some that the elimination of typhoid fever from our army following the introduction of antityphoid vaccination was due not so much to vaccination as to improved sanitary conditions This argument will hardly hold, however, in view of the success in controlling typhoid under the severe conditions of trench warfare on the western front in Europe

The occurrence of typhoid in isolated instances in vaccinated persons has led some to raise the question as to whether after all vaccination is as efficient as army statistics would indicate In addition to variations in quality of vaccine, and individual differences in the response to immunization, there are several factors which may influence the degree of immunity acquired by any individual of a series

Immunity is a relative quality Resistance in nonimmunized persons is affected by many influences which tend to improve or depress body vigor This is clearly evident in diseases having a slow onset and course, such as tuberculosis Individual variation in immunity is seen also even in diseases such as scarlet fever, in which, while one attack usually protects for life, second attacks sometimes occur Vaccination against smallpox confers a very stable immunity, but even here revaccination at intervals of a few years is found advisable The duration of immunity conferred by typhoid vaccination is not definitely determined, but there is evidence to show that it may last for five years or more, though probably in a lessening degree It has been customary to revaccinate at the end of two years, particularly if the persons concerned are liable to be exposed to unusual dangers of typhoid infection It is said that revaccination every six months has been employed in some of the troops in the present European war

Finally, the dosage of infected material which the immunized person is called on to withstand is an important factor in determining whether his protection will prove adequate In nonimmunized civil communities, during epidemics due to infected water supplies, the proportion of persons who contract typhoid fever is only a fraction of the total number who ingest the infected water This sparing of many of the exposed population is probably due in part to the relatively greater natural immunity of some persons over others who may partake of the same quantities of water, and also in part to the circumstance that some persons take smaller amounts of infected water than others The relatively greater incidence of typhoid among certain classes of large water drinkers was noted in the epidemic at Ithaca some years ago

It seems evident, therefore, that the occasional failure of vaccination to protect against typhoid should not be allowed seriously to discredit a method for which the favorable evidence is so convincing

TYPHOID AND PARATYPHOID

Vaccination against typhoid fever does not seem to protect against infections caused by paratyphoid organisms During the early months of mobilization in the present war, certain troops were immunized against typhoid only When these troops entered the field a few months later, typhoid fever was almost entirely absent, but paratyphoid was found in a number of instances Subsequently paratyphoid vaccine was included with the typhoid for immunization

Paratyphoid infections are not so common as typhoid, but since the circumstances of infection are similar in these diseases, it is advisable to include paratyphoid A and B with the typhoid organisms in the immunizing vaccine

DOSAGE

The first dose of vaccine may contain 500 millions of killed typhoid bacilli, 250 millions of paratyphoid A and 250 millions of paratyphoid B The second and third doses are each double the amount of the first injection, that is, 1,000 millions of typhoid and 500 millions each of paratyphoid A and paratyphoid B The reactions following the vaccine containing paratyphoid in addition to the typhoid bacilli do not appear to be more severe than those following immunization by typhoid bacilli alone

The dosage for children is determined by weight rather than by age Children stand immunization well For a child of from 8 to 12 years, half the adult dose may be safely given In very young children the necessity for immunization is much less than in the older children, under ordinary conditions of life their food supply is better controlled and the opportunities for accidental infections are less than in older children whose activities take them into more varied and less sanitary situations

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Examination of Schoolchildren by Private Physicians—The large number of children to be examined in the public schools and the relatively small medical staff available led the department of health of New York City to allow physical *examination of schoolchildren* by private physicians if the parent so desired The cards returned up to Feb 1, 1916, that is, during the first semester of the school year, totaled 15,606, or 16 per cent of the total number of children examined during that period This indicated that about one sixth of the parents had availed themselves of the opportunity to allow a private physician to do public health work The results of the examinations made by school inspectors and by private physicians have been tabulated for comparison, showing the percentage of defects found in the children examined Taken as a whole there is a large degree of correspondence between the two sets of figures There is, however, a high proportion of cardiac, pulmonary, orthopedic and nervous defects found by private physicians It is estimated that these examinations made by private physicians has meant a saving of nearly $12,000 to the department of health

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SATURDAY, JULY 22, 1916

CLINICAL CALORIMETRY

It cannot fail to be gratifying to Americans who are interested in the development and progress of the medical sciences to note the superior character as well as the increasing volume of the contributions that are being made from the laboratories of this country In no field is the excellence and importance of this current scientific research more evident than in the domain of the study of nutrition There was a time when the problems of metabolism were somewhat neglected for the pursuit of curative drugs or therapeutic serums Today, however, we can point to substantial contributions to the theories of nutrition and to the knowledge of significant features of food and diet which are fundamental factors in the performance of the body in health or disease

Prominent among the institutions which deserve credit for their contributions to the science of nutrition is the Russell Sage Institute of Pathology in Affiliation with the Second Medical Division of Bellevue Hospital, New York For the second time since its inception, the *Archives of Internal Medicine* has devoted a special issue to papers based on investigations in clinical calorimetry[1] These deal with a variety of topics, some of which depart widely from the questions of immediate physiologic interest and enter the domain of preeminently clinical interest, exemplifying the inevitable conclusion of most observant persons that much of clinical medicine in reality represents pathologic physiology[2]

Elsewhere in this issue we quote the remark that it is not too much to say that the science of nutrition is founded on the study of the basal energy requirement[3] The latter, therefore, needs to be fundamentally understood and determinable by adequate methods Calorimetry has helped to determine the energy needs by showing what the actual expenditures of the body are To understand and control the processes by which the body temperature is kept normal it has been necessary to discover a means for ascertaining at any time the actual quantities of heat produced and dissipated, and the effect on each factor of different normal and pathologic conditions This is accomplished by calorimetry One contribution to the science of metabolism which can be made only by a respiration calorimeter is a comparison of the direct and indirect calorimetry The former method depends on the direct measurement of the heat of radiation, conduction and vaporization The latter depends on the measurement of carbon dioxid and oxygen and the calculation of the foodstuffs metabolized each hour Largely owing to the work of American investigators, it has been demonstrated definitely that the easier indirect method of calorimetry is in such substantial agreement with the direct method as to make it available for practical purposes Indirect calorimetry has ready clinical application and advantages It suffices to determine whether metabolism is higher or lower than normal, and thus becomes a guide to treatment and the management of the food supply Henceforth the less expensive and less laborious technic of indirect calorimetry can be employed as a mode of clinical investigation with the assurance that it will suffice to furnish reliable data regarding the level of metabolism and related factors of importance to the investigator in medicine and to the diagnostician

The Sage calorimeter has demonstrated,[4] admittedly to the surprise of most students of metabolism, that the metabolism, that is, the energy expenditure, averaged 3 per cent lower when the subject was in a semireclining position, represented by rest in a steamer chair, than when the subject was at complete rest, flat in bed Muscular effort obviously increases metabolism, and most records on patients sitting upright or nearly so have shown an increased heat production over the resting condition But it must be remembered, as Du Bois points out, that in the orthopneic posture either with back rest or steamer chair as used in these calorimeter experiments, there was complete support of the body and head No more muscular tension was needed than when the subjects were lying flat and the pillows were so arranged that the men could fall asleep without change in posture It is quite possible that the diminished pressure on the diaphragm lessened the work of breathing enough to account for the lower metabolism We are reminded that "on steamers, in clubs, and in those parts of our country where laziness is a science, men assume a semireclining posture with the head, back and feet supported on any convenient object Patients who are very dyspneic are obliged to sit up, and they can sleep only in the semireclining posture The slight diminution in energy requirement may be a factor in leading them to assume the orthopneic posture, but with many cardiac and nephritic patients this economy is more than offset by increased muscular activity" At any rate, it is of no little interest to appreciate that the semireclining position which so many patients are required to assume for long periods represents no excessive expenditure of energy

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[1] Clinical Calorimetry, Arch Int Med, May, 1915, Part 2, ibid, June, 1916, Part 2 Clinical Calorimetry in the United States editorial, The Journal A M A, June 19, 1915, p 2068

[2] The contributions of more distinctly clinical bearing will be commented on in a subsequent editorial note

[3] The Basal Metabolism in Obesity, and Its Significance, editorial, The Journal A M A, this issue, p 288

[4] Soders rom, G F, Meyer, A. L, and Du Bois, E F Clinical Calorimetry, Eleventh Paper, A Comparison of the Metabolism of Men Flat in Bed and Sitting in a Steamer Chair, Arch Int Med, June, 1916, p 872

Fundamental researches on the basal energy requirement of adult man and of the young infant are now available[5] The facts regarding certain of the years of the intervening period are desirable because of the unique physiologic changes going on Thus in boys the years immediately preceding puberty are of special interest By this time the figure has lost most of its childish characteristics and the mind has reached a point of great intelligence Although the individual has scarcely passed the half-way mark in the years of growth, and has attained only half his future weight, yet he resembles the adult much more than he resembles the infant At this stage the sex glands have not yet begun the rapid development of puberty with its profound effect on the whole organism Curiously enough there is a sudden increase in the rate of growth which takes place at this time In fact, we may consider boys in the period of prepubescence as individuals of adult form but of small size, growing rapidly, and as yet scarcely influenced by the internal secretions of the sex glands The new observations with the Sage calorimeter[6] show a distinctly higher metabolism in boys of 12 to 13 years old The heat production was 25 per cent above the corresponding adult level The fact that the metabolism is high, points, says Du Bois, to a specific increase in the metabolism of the growing organism

Gephart and Du Bois[7] have noted that there are many factors which influence the amounts of water given off by skin and lungs, the most important being the amount of water previously ingested, the amount of clothing, the temperature and humidity of the air and the rise or fall of body temperature The amounts eliminated in consecutive hours may vary greatly, and even transient emotions may cause sweating Under the atmospheric conditions of the calorimeter experiments the average water elimination by normal men through the skin and lungs is 28 4 gm an hour About 24 per cent of the heat production is dissipated in the vaporization of water

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HEREDITARY ANKYLOSIS OF FINGER JOINTS

From some points of view an individual may be regarded as representing a sort of arithmetical mean of both of his parents There may be a blending of characteristics so that some features of each parent may be found in the offspring considered as a unit organism In certain respects, however, definite qualities appear to be transmitted from parent to offspring either completely or not at all Through Mendel's classic experiments and the subsequent enormous development of the study of heredity, it has become possible to formulate the plan in accord with which characteristics are transmitted so that they may appear as dominant in type and frequently manifest themselves, or may continue to be handed down in latent or recessive form until combinations of circumstances now definitely formulated lead to their cropping out Genetics has become a more representative science than the study of breeding was a generation ago In medicine, instances of hereditary transmission of bodily peculiarities and well defined structural anomalies have been known for a very long time Inherited abnormalities of function have been described in growing number in recent years The more carefully the cases are being studied and the family histories investigated, the larger becomes the number of instances which seem to obey the requirements of the mendelian rules of inheritance

Illustrative cases of the investigated inheritance of defects, both chemical and morphologic, have been reviewed from time to time in The Journal An unusually valuable addition to the literature of hereditary anomalies has been made by Cushing[1] of the Harvard Medical School on the subject of what he terms symphalangism This is an anomalous malformation of the hand which appears to belong to the category of unit characters that are believed by present day geneticists to be inherited in accordance with mendelian laws Familial tendencies have already been reported in cases of shortening of the fingers and toes which possessed only one instead of two interphalangeal articulations (hypophalangia or brachydactylism)[2] The symphalangism of Cushing refers to still another type of familial malformation previously described by Walker[3] as a particular form of ankylosis involving more especially the midphalangeal joints Aside from the possession of what the subjects designated as "straight fingers," in contrast to the "crooked fingers" of normal persons, there was no evidence of physical deterioration in the families studied Cushing has secured records of 452 related individuals reaching into eight generations of the family which he has investigated Their symphalangism, which is transmissible by either sex, appears in seven generations as a bony ankylosis of the proximal interphalangeal joints of one or more fingers In its milder degrees, the preaxial (radial) fingers are less likely to be involved than the postaxial Both hands and feet of the affected individuals may be involved The trait may be transmitted in its most outspoken form by a parent in whom it is inconspicuous, but never by unaffected parents Of the children of affected parents, about half were involved Hence the trait behaves as a simple mendelian dominant with an equal chance, among the offspring of affected individuals, that it will be or will not be inherited

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[5] For the literature on infants see Benedict F G and Talbot F B The Gaseous Metabolism of Infants Carnegie Institution of Washington Pub 201 1914 Studies in the Respiratory Exchange of Infants Am Jour Dis Child July 1914 p 1 On adults see Benedict Emmes Roth and Smith The Basal Gaseous Metabolism of Normal Men and Women Jour Biol Chem 1914 xviii 139 Benedict and Roth The Metabolism of Vegetarians as Compared with the Metabolism of Non Vegetarians of Like Weight and Height ibid. 1915 xx 231 Benedict and Smith The Metabolism of Athletes as Compared with Normal Individuals of Similar Height and Weight ibid, p 243 Benedict and Emmes A Comparison of the Basal Metabolism of Normal Men and Women ibid p 253 Benedict Factors Affecting Basal Metabolism ibid p 263 Gephart F C and Du Bois E F Clinical Calorimetry Fourth Paper Arch Int Med May 1915 p 835

[6] Du Bois E F Clinical Calorimetry Twelfth Paper The Metabolism of Boys 12 and 13 years Old Compared with the Metabolism at Other Ages Arch Int Med June 1916 p 887

[7] Gephart F C. and Du Bois E. F Clinical Calorimetry Thirteenth Paper The Basal Metabolism of Normal Adults with Special Reference to Surface Area Arch Int. Med June 1916 p 902

[1] Cushing Harvey Hereditary Anchylosis of the *Proximal Phalangeal Joints* (Symphalangism) Genetics 1916 i 90

[2] Farabee W C Inheritance of Digital Malformations in Man Papers of the Peabody Museum of American Archaeology and Ethnology Harvard University 1905 iii 69 Drinkwater H An Account of a Brachydactylous Family, Proc Roy Soc Edinburgh 1908 xxvii 35 Study of a Brachydactylous Family (Minor Brachydactyly) iv Conference Internat de genetique Paris 1911 p 549 Account of a Family Showing Minor Brachydactyly Jour Gen. 1912 ii 21 Minor Brachydactyly No 2 ibid 1914 iii 217

[3] Walker G Remarkable Cases of Hereditary Anchyloses or Absence of Various Phalangeal Joints with Defects of the Little and Ring Fingers Bull Johns Hopkins Hosp 1901 xii 129

The preference of inherited malformations of the sort described to manifest themselves in certain phalanges of the second row rather than in others raises interesting questions relating to development It is suggested that the phenomenon is associated in some way with the late appearance of the ossification centers in this phalangeal row, the last of the three to ossify There may be inherited inhibitory influences active at the prenatal period to account for these congenital anomalies Cushing points out, however, that such a suggestion, though possibly explaining the underlying lesion characterizing brachydactyly, will not fully account for the condition with which we are dealing For though a certain degree of brachydactylism does occasionally appear, the chief characteristic of symphalangism is a joint lesion Although we do not know what is the chronological succession of development for the interphalangeal joints, it is quite probable that the articulations between the proximal and middle rows of phalanges are the last to be laid down, and that in these individuals an inhibitory influence checks their development at a stage a few days later than that which checks the formation of the ossification centers and produces the shortening of the fingers known as brachydactylism

THE BASAL METABOLISM IN OBESITY, AND ITS SIGNIFICANCE

In a recent lecture, Du Bois[1] remarked, "It is not too much to say that the science of nutrition is founded on the study of the basal energy requirement" A large number of substitutes for this expression — basal metabolism, basal caloric requirement, basal heat production, minimal metabolism, postabsorptive metabolism, total gaseous exchange, etc — are in current use, and Du Bois suggests that on looking over this formidable list of synonyms one receives the impression that scientists have spent much time in coining phrases, and have tried to make two words grow where one grew before

It is a credit to the development of science in America that in recent years so much of the valuable information regarding the fundamental facts of nutrition has been the outcome of research work in our own institutions This applies, among other things, to the determination of the basal metabolism of man Du Bois has summarized the results in this way With most individuals the basal metabolism is surprisingly uniform from day to day and from year to year Of course the heat production of a man depends largely on his size, but it is by no means proportional to the body weight A large man gives off more heat than a small man, but for each kilogram of weight the small person has the higher metabolism On the other hand, the metabolism of men of various sizes and shapes is rather closely proportional to the surface area of the body Many years ago Rubner established this law of surface area, and was able to show that mice, rabbits, dogs, men and horses had almost the same metabolism per square meter of skin The level of metabolism varies greatly with age During the first few days of life it is very low, then rises rapidly during infancy, and reaches its highest level in the almost unexplored period between the ages of 2 and 6 years After this it falls rapidly until about the eighteenth year, when the curve flattens out Between the ages of 20 and 40 there is comparatively little change, but after this a slight fall, so that by the eightieth year the line is about 10 per cent below the average level for the ages of 20 to 40 There seems to be a stimulation to the basal metabolism during the period of growth Women show an average basal metabolism about 7 per cent lower than that of men of the same age Athletes are about 7 per cent higher than men of sedentary habits Confinement indoors or in bed reduces the metabolism Prolonged undernutrition can reduce the metabolism 30 or 40 per cent Benedict's subject, Levanzin, who fasted for thirty-one days, showed a marked reduction in basal metabolism, amounting to about 23 per cent after three weeks' starvation

In abnormal states metabolism may be modified to a surprising extent Thus in exophthalmic goiter, which involves, as is commonly believed, an overactivity of the thyroid, the resting metabolism may be increased to twice its normal level, whereas in the hypothyroidism seen in myxedema the metabolic heat production is below normal The fundamental revision of the subject of the physiology and pathology of basal metabolism is certain to furnish data of value in clinical medicine, particularly with respect to food requirement, which is determined by the energy exchanges, and heat regulation incident to the varying heat production of certain diseases

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[1] Du Bois, E F The Basal Energy Requirement of Man, Jour Washington Acad Sc, 1916, vi, 347

Obesity is sometimes looked on as a disease There are, of course, pathologic conditions associated with abnormally large increments in weight and development of the adipose tissue Is there a form of obesity indicative of a pathologically lessened power of energy exchange—an anomaly of metabolism? Measured on the basis of body weight there may appear to be a distinct difference amounting often to 30 or 40 per cent in the basal heat production of fat and lean individuals, but they have almost exactly the same heat production in terms of surface area Means[2] has found that the majority of obese subjects show no alteration in the basal metabolism, as expressed in terms of their surface area, even though the obesity is of a most extreme type

Occasionally a slight reduction in metabolism occurs in obese persons In Means' experience such subjects invariably show some clinical evidence of disturbed internal secretion Hypopituitarism, which is often attended with adiposity, is an illustration of what is referred to here Perhaps these facts will be of significance in the future in relation to the problems of differential diagnosis in obscure disorders of the endocrine glands

SUPERSTITIONS CONCERNING MENSTRUATION

It is not surprising to find the mysterious phenomenon of menstruation involved in all sorts of superstitions and religious beliefs Probably the most widespread assumption which permeated religious rituals and led to the establishment of curious customs associated with the menses was that menstruation periodically rids the body of woman of something undesirable that has accumulated in the organism, more specifically in the blood To some it thus was a mechanism for removing an excess of nutriment from the body According to the Mosaic law the mystery represented a process of purification the impurities collected in the woman's blood were discharged in the menstrual flux, so that she underwent a recurring series of purifications To the men of the monasteries, says Crawfurd,[3] menstruation was a symbol of the essential sinfulness and inferiority of women, polluted alike and polluting

It is not difficult to trace a relationship between such ideas and the more magical beliefs that the menstruous woman is possessed by an evil spirit which resides in her blood Accordingly, by the medium of her menstrual blood she may exert an influence for harm on her environment The malign spell has at various times and among different races been assumed to exert a variety of potent effects, hence the numerous prohibitions found placed on the female members of the household in the past Thus is explained the seclusion of women from the cattle and the milk supply at certain periods among the Kafir tribes of South Africa Frazer says that in Galela women at their monthly periods may not enter a tobacco field, and in Sumatra are forbidden the rice fields for fear of damaging the crop Whole catalogues of uncanny phenomena attributed to the catamenial state might be enumerated, such as the belief, dating back to the time of Aristotle, that the glance of a menstruous woman takes the polish out of a mirror Among certain races every house has two doors, one of which is used exclusively by the women during menstruation Crawfurd naively asks whether "the altogether inordinate apprehensions of both nurse and surgeon as to the evils of operation during the menstrual state are tinctured with the savor of this same superstitious fear"

The idea underlying these customs so interesting in the history of medicine has been summarized by Crawfurd as follows There resides in the menstrual blood some agent powerful for good or for harm Most of all is its power over the virility of the male, enfeebling him in the struggle for the survival of the fittest The spirit of the woman resides in her blood, and is transferable therewith to the male It is a special aspect and a special application of the universal primitive blood horror, founded on the same belief that the spirit of the person resides in his blood and emerges with it for good or for harm In addition, there is something unintelligible about menstruation, something uncanny, and the primitive mind explains it as due to some spiritual agency, which may harm the woman if she does not take care of certain precautions, and may pass from her and harm others it they neglect the prescribed precautions

The periodic changes in the uterine mucous membrane which initiate menstruation are now known to depend on the functional activity of the ovary The onset of the period coincides with the first production of ripe ova in the ovary, it ceases with the cessation of ovulation at the climacteric or menopause In cases in which the ovaries have been removed before puberty, menstruation never occurs Removal of both ovaries from adults usually brings about a premature menopause Ovulation and menstruation are thus obviously interrelated Modern theories have usually assumed that menstruation is part of a preparation for the reception of the fertilized ovum The facts are still too uncertain and conflicting to permit the formulation of a tenable hypothesis The review of the mystical beliefs of the past always serves as a warning against hasty generalizations in the more enlightened days of modern science

The Growth of Wisdom.—What we call wisdom is the result not the residuum of all the wisdom of past ages — Henry Ward Beecher

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[2] Means J H The Basal Metabolism in Obesity Arch Int. Med May 1916 p 704 Studies of the Basal Metabolism in Obesity and Pituitary Disease Jour Med Research 1915 xxxii 121

[3] Raymond Crawfurd Proc Roy Soc. Med 1915 ix Section of the History of Medicine p 49

Current Comment

POISONOUS PROPERTIES OF THE GARDEN DAFFODIL

The daffodil (*Narcissus pseudonarcissus*) has graced our gardens for generations Although its poisonous properties have been known for a long time, little attention has been given to the subject by physicians In 1910 Walsh[1] noted that the flower pickers of the Scilly Isles were subject to an irritating eruption on the hands, and he attributed this to the handling of the blossoms of the daffodil and narcissus Neither the juice of the fresh plant, the alkaloid extracted from the plant nor the oil extracted from jonquil pomade produced any effect on the skin unless the skin was abraded In a recent paper, McNab[2] calls attention to the dangers attendant on the accidental employment of daffodil bulbs as food An ignorant cook prepared a soup from the bulbs in place of onions, with the result that those who partook of it suffered from nausea and violent vomiting and diarrhea It was not until after the poisoning had been repeated several times that the error was discovered There were no deaths During the discussion, several obscure cases of poisoning were related, which appeared to be explainable by the assumption of similar mistakes Daffodil bulbs contain an alkaloid (or alkaloids) whose physiologic action differs according to the stage of growth of the plant If extracted from the flowering bulb the alkaloid produces dryness of the mouth, checks cutaneous secretions, dilates the pupil, quickens the pulse, and slows and weakens the heart contractions The alkaloid extracted from the bulbs after flowering produces copious salivation, increases cutaneous secretion, contracts the pupil, and produces slight relaxation of the pulse, slight faintness and nausea Such widely divergent physiologic effects indicate that there must be considerable differences in the nature of the alkaloids at the different times mentioned Since the daffodil is so common in gardens it might be well to consider it in poisonings of mysterious origin

THE BACTERICIDAL PROPERTY OF GASTRIC CONTENTS

That gastric contents possess the property of arresting putrefaction was observed in the middle of the eighteenth century by Spallanzani, who found that putrefying meat brought into contact with gastric secretion ceased to putrefy With the advent of bacteriology this was explained as due to the bactericidal action of the gastric secretion, and the question arose whether under normal conditions pathogenic organisms could pass through the stomach Koch was the first to show that cholera bacilli were killed by gastric secretion within a few hours He further held that the organism could pass through into the intestine only in the presence of a disturbance of secretion or as a result of overloading the stomach Other workers took up the problem, and it was found that cholera germs, typhoid bacilli and pyocyaneus bacilli were killed in a very short time, while anthrax and tetanus bacilli (spore bearers) and the tubercle bacilli passed through unharmed The mode of bactericidal action of the gastric juice has recently been investigated by Gregersen[1] Forty-five minutes after an Ewald meal, gastric contents were secured from a variety of conditions, and the power tested on various organisms He found that the bactericidal power varied directly as the free acid content, and was not influenced by the amount of combined acidity or the amount of pepsin Furthermore, the bactericidal action of the juice was from three to four times as strong as similar strengths of the pure acid in water This, he explains, is due to the bactericidal property of the bread used in the Ewald meal, which is activated by the free hydrochloric acid Solutions of bread in water possessed very slight action, but the addition of pure acid to a percentage approximating that of the gastric contents resulted in increasing the bactericidal power to three or four times that of the two taken separately That bacteria are constantly passing through the stomach is due to the rapid passage of water and foodstuffs in which the free hydrochloric acid does not reach a sufficient concentration to exercise its bactericidal power

RURAL HEALTH AMERICA'S FIRST DUTY

Shortly after Congress convened, last winter, Senator Randsdell of Louisiana, chairman of the Senate Committee on Public Health and National Quarantine, introduced Senate Bill 2214, appropriating $500,000 for the use of the United States Public Health Service, to be used in investigating and encouraging the adoption of improved methods of rural sanitation and especially for devising and demonstrating effective measures against malaria and typhoid, instructing farmers in the prevention of these diseases, carrying on necessary investigations and surveys, and cooperating with state and local authorities to eradicate these diseases in rural districts The bill was reported favorably by the committee Friday, July 14, in the Senate, Senator Randsdell presented a strong argument for his bill He reviewed the history of health legislation in the United States, showing that local regulation had generally been ineffective and that most of our advances in federal legislation had resulted from disastrous experiences with epidemic diseases As the representative of the Southern state in which the inroads of yellow fever have been perhaps most severe, Senator Randsdell is able to speak with authority and from personal observation New Orleans' recent epidemic of bubonic plague and the brilliant work of the Public Health Service in stamping it out was vividly described "Never again will there be an epidemic of bubonic plague in New Orleans," he said "The people of that city realized that the conquest of this disease was one for the federal government Today, as a result of the campaign against yellow fever and the campaign against bubonic plague, New Orleans is one of the healthiest cities in the world" After reviewing the work of the Public Health Service and showing the limited means available, Senator Randsdell showed that in this country, in any line of progress, education is indispensable, and that, although much educational work has been done, and although the death rate throughout the nation has fallen during recent years, this decline has been much greater in urban than in rural communities He then discussed the economic and vital loss due to malaria and typhoid, showing that these two diseases alone cost the United States over $900,000,000 each year, and that both diseases are almost entirely preventable Comparing the 1915 appropriation for the prevention of human disease with that for the prevention of diseases of animals, Senator Randsdell called attention to the fact that the total amount appropriated last year for human welfare was less than two million dollars, while the amount appropriated for animal and plant welfare was nearly six million "The problem of rural sanitation," he declared, "is not a local problem, but one which concerns the health and physical integrity of our entire nation" Senator Randsdell's speech in favor of the passage of his bill is one of the strongest public health utterances ever made before Congress While the bill is simple in its phraseology and provisions, its passage would result in widespread and lasting benefit to the entire country, and would greatly strengthen the Public Health Service If Congress will pass this measure, it will deserve the gratitude and thanks of the public and especially of our rural population

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[1] Walsh, D Brit Med Jour, 1910, ii, 854

[2] McNab Pharm Jour, 1916, xcvi, 367

[1] Gregersen Centralbl f Bakteriol, I, O, 1916, lxxvii, 353

THE RESPONSIBILITY FOR PURE WATER SUPPLY

The courts have shown a more and more marked tendency of late to place on companies or corporations supplying water for drinking purposes the responsibility for its freedom from contamination The farthest advance is made by the Court of Errors and Appeals of New Jersey, which has ruled that a water company supplying water for domestic purposes is liable to a consumer for damages resulting from illness due to pollution of the water, when the water company knew or should have known that the water was contaminated, and that the consumer met the burden of establishing the company's liability by the introduction of testimony which tended to prove open and notorious contamination of streams connected with the company's sources of water supply[1] It is extremely regrettable that a judge of Pickaway County, Ohio, has shown a reactionary tendency in an instruction to the jury in a similar case[2] A small epidemic of typhoid fever had been traced to the contamination of the water company's supply owing to a defect in a check valve established between the latter's mains and the extraneous water supply of a paper mill The administrators of the estate of one of the victims of this epidemic sued the water company for damages The jury returned a verdict for the defendants There were several points in the case on which this verdict may have been based The judge in a remarkable instruction to the jury stated that, if it was a matter of common knowledge that the water was at fault, they should find a verdict for the defendant He said further that it would be a matter of common knowledge if they found that the subject was discussed in conversation generally and that the newspapers had published recommendations to the consumers to boil the water It will be seen that this view of the law is diametrically opposed to that which is taken by the New Jersey court in the case already quoted As neither decision seemed to be based on statute but both on the common law, it is difficult to guess where the judge of the Circleville court can have found his law It is unfortunate that the nature of the case was such that it was not carried to appeal, and it is to be hoped that should another occasion arise, a decision of the supreme court of the state of Ohio will be obtained

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities new hospitals education, public health, etc)

DISTRICT OF COLUMBIA

Infantile Paralysis—To advise the residents of the District of Columbia with reference to anterior poliomyelitis and suggest methods and means for preventing the disease, a proclamation has been issued by the commissioners of the District of Columbia 50 000 of which have been printed and are being distributed from door to door by the police This leaflet speaks of the causation of the disease, the methods by which it is believed to be communicated, and gives rules for the protection of children

Dinner for Dr Glueck.—Thirty physicians and lawyers friends of Dr Bernard Glueck, Washington, tendered him a dinner July 11 in honor of his recent appointment as alienist at the New York State Prison at Sing Sing Dr Glueck will leave his present position at the government hospital for the insane to assume his new duties in about two weeks Dr William A White acted as toastmaster, and brief addresses were made by Drs George M Kober, Wilfred M Barton, Francis R Hagner and Prentiss Willson, and Messrs E J Ayres, George C Shinn and Frederick A Fenning

ILLINOIS

State Society Picnic—The first annual picnic of the Illinois State Medical Society was held at State Reservation Starved Rock, July 12 and 13 and was participated in by about 200 The two days were spent in hikes through the canyons near Starved Rock, in dancing boating excursions, golf, etc

Chicago

Disposition of Field Hospitals—At a meeting of brigade officers at San Antonio July 10 the disposition of the two field hospitals of the state was considered and it was recommended that Field Hospital No 1 be assigned to the First Brigade and Field Hospital No 2 to the Second Brigade

Psychopathic Laboratory Attacked—At a meeting of the board of managers of the Chicago Bar Association recently, the committee appointed for that purpose recommended to the board of managers that the Psychopathic Laboratory connected with the Municipal Court of Chicago be discontinued

Personal.—Lieut Ray H Davies assigned Illinois Field Hospital No 2 while entraining for the border at Springfield with his command, fractured two ribs——Dr Morris Lewison has succeeded the late Dr Theodore B Sachs on the advisory board of the Jewish Consumptive Relief Society——Dr John H Noonan has been appointed assistant surgeon of the Park Hospital, Livingston, Mont——Dr John G O'Malley has returned after a year of hospital service in the Ypres district of France

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[1] Jones v Mount Holly Water Company 93 Atl Rep 800 (1915)

[2] Grant v Circleville Water Company Court of Common Pleas Pickaway County, Ohio, 1915 Engineering News 1915 lxxiv 631

First Conviction Under the Illinois Prevention of Blindness Act—The secretary of the Illinois Society for the Prevention of Blindness reports that sixteen physicians and midwives have been prosecuted for failure to report cases of babies suffering from ophthalmia neonatorum within six hours after having observed the first symptoms In one case the physician was convicted and fined $50, but on plea of misfortune made by the defendant's lawyer, and concurred in by the official of the society, the fine was reduced to $25 The attorney general has authorized the prosecution of nine more cases and the data on six additional violations of the law were forwarded to Springfield, July 15——The Chicago Ophthalmological Society at its annual meeting adopted resolutions endorsing the efforts of the Society for the Prevention of Blindness The two salient features in the law in question are the requirement that the attending physician or midwife advise the use of a prophylactic in the eyes of all new-born babies, and that report must be made of inflamed eyes irrespective of the cause of infection

IOWA

Erection of New Hospital—An isolation hospital having a capacity of forty beds is being erected in connection with the State University of Iowa, College of Medicine It is reported that $42,000 has been set aside for the construction of the institution

Personal—Dr Walter L Bierring, Des Moines, was reelected president of the state board of health, Dr George F Severs, Centerville, was elected vice president, and Dr Guilford H Sumner, Des Moines, was reelected secretary of the board——Dr Clinton E Harris, Grinnell, has been appointed a member of the state board of health——Mr A E Kepford reentered the state employ, July 15, as tuberculosis lecturer, a position which he resigned a year ago to enter the evangelistic field——Dr Frank H Clark has been elected president of the school board of Clarinda

MAINE

New State Officers—At the sixty-fourth annual meeting of the Maine Medical Association, held in Portland, June 7 and 8, under the presidency of Dr Erastus E Holt, Portland, the following officers were elected president, Dr Willis F Hart, Camden, vice presidents, Drs Geoorge R Campbell, Augusta, and Ralph W Wakefield, Bar Harbor, and secretary-treasurer, Dr John B Thompson, Bangor (reelected) The annual oration was delivered by Dr Frank S Meara of New York After the annual banquet, an illustrated lecture on "Experiences of the Layman on a Journey of Three Months in Japan, Korea and China with Three Prominent Medical Men" was delivered by Dr Wallace Butterick, secretary of the General Education Board of the Rockefeller Foundation

MARYLAND

Personal—Dr Nathan Winslow of the University of Maryland, who has been ordered to the Mexican border as a member of the Medical Reserve Corps, has been sent to Field Hospital No 3 on the line of communication under General Pershing

Medical Officers Meet—The second quarterly meeting of the deputy state health officers was held recently at the Medical and Chirurgical Faculty Building in Baltimore Dr C Hampson Jones presided and an address was made by Dr John S Fulton, secretary of the state board of health Newly appointed health officers received their commissions An open discussion of the various phases of the domestic quarantine and contagious diseases was held

MASSACHUSETTS

Personal—Dr Frankwood E Williams Cambridge, has been appointed by the governor a member of the advisory prison board——Dr Charles S Curtis, Spencer, who has been on the staff of Dr Grenfell's Hospital, St Anthony, Labrador, for more than a year, will return to his home in a short time

Psychologic Laboratory Established—As a result of the adoption of a legislative act by the city council, June 23, the Boston police court will have a medical department and psychologic laboratory Dr Victor V Anderson will be in charge of the new bureau, which will pass on the mental condition of offenders

Health Movies—More than 5,000 people attended a moving picture show at Franklin Field, Boston, recently, the first of a series to teach hygiene and clean living Other similar lectures will be given at various parks and playgrounds about Boston during the summer The state department of health has initiated this work and is working in conjunction with philanthropic societies

NEW JERSEY

Personal—Dr Robert R Reed, Morristown, is announced as the winner of a photoplay competition for his play entitled "Witchcraft"

Doctors Enroll for Emergency—Twenty of the prominent physicians of Atlantic City enrolled, July 8, as members of the Atlantic City branch of the American Emergency Corps The call was issued by Dr Philip Marvel, Atlantic City

NEW YORK

Offers Farm for Sick Children—Madam Edith Helena Rossi has telegraphed Commissioner of Public Health Emerson offering as a fresh air resort her farm of 60 acres at Dykeman, 52 miles from the Grand Central Station, in a virgin forest with a natural lake Madam Rossi believes that several thousand children can be accommodated in tents if the health department or a charitable society in the metropolis can provide the tents and food for the children

Training Camp for Doctors—Maj-Gen Leonard Wood, Governors Island, announces that two training camps for medical men will be held in connection with the Plattsburg military training camp this month The first was opened July 12, and the second will open July 24 The camps will be commanded by medical officers of the regular army Physicians desiring to attend these camps should communicate with the Military Training Camps Association, 31 Nassau Street, New York

Poliomyelitis Outside of New York City—The number c
cases of infantile paralysis that have occurred in the stat
outside of the city of New York since the beginning of th
epidemic was 100 up to July 14 There have been in
eight deaths The state department of health has sent
circulars of information to the health officers of the
as a guide in their campaign for the prevention and cur
the disease The new instructions would require board
house and hotel keepers and others to notify the health officers of the arrival of any children from infected districts
The city authorities have offered to take back any cases i
other parts of the state that originated in the city Officer
of the state health department have been giving lectures i
various parts of the state with a view of instructing healt
officers and physicians verbally concerning the control o
infantile paralysis

New York City

Provide Aid for Paralysis Cripples—The Brooklyn Bureau of Charities is making arrangements to handle the aftermath of the epidemic of infantile paralysis and to see that children receive the necessary corrective treatment after being discharged from the hospitals The committee appointed has decided to extend its activities so as to afford orthopedic care to about 500 children who are soon to be discharged from the Brooklyn hospitals It is estimated that at the present time more than one half the children who leave the hospitals after an attack of poliomyelitis are crippled

Personal—Dr Elbert M Somers, Brooklyn, has resigned his position as superintendent of the Brooklyn State Hospital because of ill health——Dr C Grana has sailed for Naples on the *Stampalia*——Drs Harry Plotz and George Baehr of the Mount Sinai Hospital have returned after a year spent in work with typhus fever in Serbia, Bulgaria, Austria and Hungary——Dr Peter K Olitsky has returned after several months spent in Mexico in the study of typhus fever and other climatic diseases——Dr Franklin C McLean has started for China, where he has been appointed the executive head at the medical school and hospital to be established in Peking, by the Rockefeller Foundation

NORTH CAROLINA

State Board Election—At the annual election of the State Board of Medical Examiners at Raleigh, Dr Martin L Stevens, Asheville, was elected president, Dr Hubert

Royster, Raleigh, secretary-treasurer (reelected), Dr Isaac M Taylor, Morganton delegate to the meeting of the council in Chicago, and Dr Edwin G Moore, Elm City, alternate

Must Report Tuberculosis—The Bureau of Tuberculosis of the state board of health is serving notices on all delinquent physicians and heads of institutions for the treatment of diseases that they are required to report all cases of tuberculosis under their charge to the Bureau of Tuberculosis within seven days after recognition of the disease

Medical University Extension Lectures—The medical course offered by the Extension Bureau of the University of North Carolina in connection with the state board of health was started by Dr Jesse R Gerstley, Chicago, on 'Diseases of Children," July 4 The course is being taken by nineteen physicians and a number of nurses have also been invited to be present——The first lecture to the Wayne County physicians who have registered for the course of postgraduate medicine was given, June 9, at Goldsboro by Dr Lewis Webb Hill, Boston The course consists of seventeen lectures

Personal—Dr John R Williams, formerly of Greensboro, but of late a resident of Tucson Ariz, has returned to North Carolina and will practice at Asheville with his father, Dr John Hey Williams——Dr William W Perdue, formerly associated with Dr Henry H Briggs, Asheville, has resumed practice in Mobile, Ala——Drs William T Shipp, formerly of Louisville Ky, and George W Shipp, recently of Newton, will be associated in the practice of medicine at Asheville——Dr Benjamin E Washburn of the International Health Commission, whose headquarters are now at the Port of Spain, Trinidad, is visiting relatives in North Carolina and was in conference, July 5, with Dr Watson S Rankin, secretary of the state board of health ot Raleigh——Dr James A Speight, Rocky Mount has been appointed whole time health officer of Nash County, succeeding Dr James C Braswell, Jr, Nashville, resigned

Sanatorium Notes—The opening exercises of the Anson County Sanatorium, Wadesboro, were held July 4 In the morning a number of operations were performed and after lunch there was a literary program of four papers followed by a general discussion, and in the evening there was a general reception to the physicians and the public at the hospital——Appalachian Hall, a sanatorium for the treatment of persons suffering from nervous disorders, has been opened at Asheville under the charge of Dr Bernard R Smith——The deed for a six-room house at Durham to be used for an annex to the Lincoln Hospital for the care of colored tuberculosis patients has been recorded The price paid for the house was $1 600 The ladies of the Civic League will equip the hospital and the city and county will each appropriate $25 a month toward current expenses——Rowan County Medical Society has petitioned the county commissioners to provide a tuberculosis sanatorium for the county

PENNSYLVANIA

Personal—Dr William S O'Neill Sherman, Pittsburgh has started for Europe, where he will do research work in war hospitals for the Rockefeller Institute He is to make a special study of gangrene, tetanus and amputation

Ice Cream Causes Typhoid—Seventeen of the twenty-three cases of typhoid fever in Altoona have been traced to ice cream sold by one dealer according to the report of Health Officer Thomas G Herbert He closed the plant where the confection was made It was first supposed that the outbreak was due to impure milk but an investigation showed that every family afflicted had bought ice cream from one dealer and that some had not purchased any milk The health authorities are continuing their investigation

Quarantine for Infantile Paralysis—The advisory board of the Department of Health of Pennsylvania has adopted rules and regulations for the quarantine of infantile paralysis All premises in which infantile paralysis exists are to be placarded, and no persons other than the attending physician and trained nurse shall enter or leave the said premises, the quarantine period shall be a minimum of twenty-one days from the date of onset until complete recovery or death or removal of patient, placard or placards shall remain in place until the expiration ot the quarantine period and shall be removed only by the health officer at the time when he shall disinfect the premises after such disinfection, the householders shall thoroughly cleanse the room occupied by the patient and all articles ot bedding clothing etc, used by the patient, with soap and water and thoroughly air the room and admit as much sunlight as possible, the quarantine restrictions for acute anterior poliomyelitis relating to school attendance exposure of patient in public places, use of conveyances by persons suffering therefrom, sale of bedding, clothing, etc, burial of bodies and funerals of persons dying therefrom, shall be the same as is now provided for diphtheria and certain other diseases, children under 16 in premises quarantined for anterior poliomyelitis, but not themselves affected with the disease, shall not be permitted to attend any school, church service, theater or moving picture show during the quarantine period and all doors and windows in rooms occupied by persons suffering from acute anterior poliomyelitis must be screened from flies and other insects

Philadelphia

Red Cross Campaign—A large number of physicians and laymen met in the offices of the mayor, July 14, and outlined plans tor the enlargement and extension of the South-Eastern Chapter of the American Red Cross Efforts will be made to obtain 50 000 new members by July 20 Dr Alfred Stengel presided at this meeting

To Care for State Troops—It has been decided to send a band of the South-Eastern Chapter of the American Red Cross to the border in order that the health of the Pennsylvania troops may be more carefully preserved Materials in large quantities including reading matter and tobacco, are wanted at once by the Red Cross A call for 100 women to assist in preparing goods has been issued by Dr Alfred Stengel, chairman

Infantile Paralysis—This city has remained comparatively free from the epidemic of infantile palsy, only two cases having been reported No new cases have been observed during the present week and only eight cases have been reported throughout this state At a meeting of the state department of health rules were adopted placing infantile paralysis on the list of diseases for quarantine This is the first time in the history of Pennsylvania that this malady has been in this category

Year's Delay in College Merger—The merger of the Medical School of the University of Pennsylvania and the Jefferson Medical College, which has been reported in The Journal, will not be consummated this year The authorities find that it would be impossible to make proper and adequate preparation tor the conducting of the two institutions jointly The following statement was made by a dean of one of the institutions

> The members of the United Medical Committee in charge of the Medical School of the University of Pennsylvania and the Jefferson Medical College of Philadelphia, have agreed that it is advisable to postpone the consummation of the union agreed on by the plan adopted by the trustees of the two institutions in order that further opportunity may be afforded for considering a number of important matters relative to the mode of administration of the new school and have, therefore determined that each of the schools shall conduct separately from and indeependently of the other and of the United Medical Committee the work ot its college term for 1916 1917

WISCONSIN

Women Charges to be Sterilized—The State Board of Control June 29 authorized the sterilization of the women inmates of the State Home for the Feebleminded, Chippewa Falls

District Turned Over to City—At the meeting of the Milwaukee Society for the Care of the Sick July 5, it was voted to turn over its three free dispensaries to the city provided that the municipality will accept and maintain them The health commissioner presented a resolution to the council tor an appropriation of $500 to assume the work of the society

Hospital News—At a conference between the executive committee of the Milwaukee Chapter ot the American Red Cross and J J O Connor of the Central Division of the Red Cross it was decided to organize a Red Cross base hospital in Milwaukee, a plan tor the aid of dependent families of militiamen and other soldiers was perfected, arrangements were made for the production warehousing shipping and distribution of hospital and other supplies, a system of first aid work was established and arrangements were made for the establishment ot an information bureau of soldiers on the border or in Mexico A fund ot $60 000 is to be raised to be divided as follows $25 000 for equipment for the base hospital $15 000 for dependent families ot Milwaukee militiamen $15 000 tor supplies and $5 000 tor miscellaneous needs——A brick hospital two stories and basement in height and 102 by 42 feet will be erected at Plymouth this summer at a cost ot $24 000 by the Hospital

Association of that city——The Evangelical Deaconess Hospital, Milwaukee, is to have a four story and basement addition, 42 by 90 feet, to cost about $50,000 and will accommodate about sixty patients

CANADA

Head of New Hospital at Coburg, Ont—Dr Fulton S Vrooman, for the past three years superintendent of the Brockville (Ont) Hospital for the Insane, has been appointed superintendent of the new Military Hospital at Coburg, Ont This hospital has been established by the Canadian government for the treatment of shell shock and nervous cases among returned soldiers

Infantile Paralysis in Canada—The Ontario Board of Health reports infantile paralysis as having appeared in Ford, Ont, but so far only one or two cases The chief officer of health has issued instructions to his aids and to the profession at large to be on the watch for the dread disease Suggestions have also been made as to its detection, quarantine, etc It is reported, also, that Montreal has five or six cases of the disease

Toronto Women Physicians Meet—The annual meeting of the Toronto Women's Medical Association was held in the Academy of Medicine during the past week Instructive and interesting addresses were given by Dr Haslem and Dr Reta Kilburn, returned missionaries from India and China, respectively The following officers were elected president, Dr Jennie Smillie, vice presidents, Drs Haslem, Ellen A A Burt-Sherratt and Julia Thomas, and secretary-treasurer, Dr Elizabeth L Stewart

Special Convocation at McGill University—Fourteen medical students have received the degree of Doctor of Medicine at a special convocation held in McGill University, Montreal, last week Acting-Dean Alexander D Blackader presented the diplomas These fourteen men went to the front a year ago with McGill Base Hospital, and after eight months' active service were asked by the British government to return to Canada to complete their studies The entire number are returning to France with commissions in either the Canadian or British Army Medical Corps

Toronto Base Hospital—The old Toronto General Hospital is rapidly being fitted up as a base hospital The regeneration is being conducted under the supervision of Lieut-Col Thomas B Richardson, who has received the appointment of commandant With him are to be associated the following Capts H H Harvie, R L Gingall, J W Livingstone, R D Mackenzie, Angus A Campbell, Colin G Campbell, Charles E Treble, Herbert E Wallace, Charles C Ballantyne, Robert F Slater, James E Barry, Frederick B G Wilson and Alexander E Macdonald As soon as possible all the patients from Exhibition Camp, Toronto, will be transferred to the base hospital The number is now 526

GENERAL NEWS

Correction—In The Journal for July 15, 1916, p 163, Dr Oliver S Ormsby's discussion on the paper by Dr F Wise, the word "chrysarobin" should read "neorobin"

Bi-State Meeting—The first meeting of the Federation of County Medical Societies of Northern Illinois and Southern Wisconsin was held at Freeport, July 6, when the executive officers of seventeen county medical societies convened to organize an independent society Dr William B Peck Freeport, was elected president and Dr Nelson C Phillips, Freeport, secretary

Resolution on Age of Medical Officers—House Joint Resolution No 239, offered in the House by Mr Lobeck, authorizes the Secretary of War to exempt from the age qualifications in Section 10 of the act approved June 3, 1916, entitled "An act for making further and more effectual provision for the national defense and for other purpose," those persons who had been heretofore designated or invited by the Secretary of War to take examinations for commissions in the medical corps of the army from the operation of said provision of said act

The Plattsburg Camp—The first camp of instruction for medical men was opened at Plattsburg, N Y, July 12, with Maj William DeWitt, M C, U S Army, in charge The second camp will open July 24, and while no camps have been established as yet, during the fourth and fifth periods of the camp arrangements for this can be made providing a sufficient number of applicants offer The number of applicants for each camp is limited to two hundred Applications should be made to Mr R N McGill, 565 Federal Building, Chicago

Anterior Poliomyelitis—Appeal to Congress for $135,000 for support of the public health service's campaign against the infantile paralysis epidemic in New York and to prevent its spread to other states was made by Secretary McAdoo of the treasury department, July 11, and Congress is urged to make the money available immediately Dr William C Rucker, who is in active charge of the fight against the epidemic, believes it will cost about $10,000 a month for the work of the service alone Secretary McAdoo has offered the assistance of the public health service to the authorities of New York City in their efforts to suppress the disease, and as a result seven public health surgeons are cooperating with the officials there

Would Inspect Army Food—An investigation of the food supplied to the army and militia would be authorized under a resolution introduced in the House, July 7, by Representative Hulbert of New York. The resolution would authorize the president to appoint a civilian commission of not less than three members "to inspect the food supplied to the military forces of the United States, and to determine whether it conforms with the specifications of purchase and whether it is wholesome and adequate" The resolution would authorize the commission to serve during the "pleasure of the president," and would provide salaries of $5,000 a year for each commissioner The resolution was referred to the House Military Affairs Committee

Bequests and Donations—The following bequests and donations have recently been announced

Medical College of the State of South Carolina, Charleston, a donation of $1,000, to be used in purchasing equipment for the outpatient department, by an anonymous benefactor

Touro Infirmary, New Orleans, a donation of $14,000 for a new building for outpatients by an anonymous benefactor

Babies Hospital, Philadelphia, a donation of $7,000, the proceeds of lawn fetes given in the neighborhood

Johns Hopkins Hospital, Baltimore, $500, the income from her gift of $10,000, as a memorial to her little grandson who was drowned one year ago, by Mrs John Mifflin Hood, the money to be applied for the care of sick children in the hospital

For a new hospital at Spring Lake, N J, and a convalescent home a bequest of land by Mrs Anne Whartenby and a donation of $42,000 by residents of Spring Lake

Atlanta Medical College, $25,000 toward an endowment fund, $500 of which was received from Dr Floyd W McRae

Maryland State University, an appropriation of $25,000 a year for two years from the state legislature, for medical education

Medical College of Virginia, pledges of over $250,000, to be used in the erection of a hospital for contagious diseases, a hospital for colored patients and a nurses' home, these to be departments of the Memorial Hospital

Ogdensburg (N Y) City Hospital, a gift of $130,000 as an endowment by A Barton Hepburn The property will be taken over by the A Barton Hepburn Corporation, which will be incorporated under the laws of the state

Aid for Belgian Physicians—The report of the treasurer of the Committee of American Physicians for the Aid of the Belgian Profession lists no contributions for the month of June, 1916

Previously reported receipts		$7,941 86
Previously reported disbursements		
1,625 standard boxes of food at $2 20	$3,575 00	
1,274 standard boxes of food at 2 30	2,930 20	
353 standard boxes of food at 2 28	804 84	
Total disbursements		7,310 04
Balance		$ 631 82

F F Simpson, M D, Treasurer,
5 Jenkins Arcade Building, Pittsburgh

Amendment of Alcohol Bill—An amendment to the existing laws relating to the use of alcohol, free of tax, by scientific institutions or colleges of learning, has been read twice in the Senate and referred to the committee on finance This act authorizes the secretary of the treasury to grant permits to withdraw alcohol from bond, free of tax, to any scientific university or college of learning constituted as such by any state or territory under its laws, though not incorporated or chartered, and to any hospital maintained by endowment or otherwise and not conducted for profit, on the same terms and subject to the same restrictions and penalties already provided by Section 3297, the Revised Statutes of the United States, and provided that alcohol so obtained may be used in surgical operations and, except as a beverage, in the treatment of patients, and provided further that the bond required may be executed by an officer of an institution for it and on its behalf, with two good and sufficient sureties on like conditions

The Upson Foundation—The Henry S Upson Foundation was organized in 1915 to encourage the systematic study of problems wherein dental pathologic conditions are correlated with those of internal medicine, surgery, neurology and psychiatry For several years before the death of the late Prof Henry S Upson of Western Reserve University he had been initiating researches, collecting data and conferring with those who might aid his quest After Dr Upson's death, Mrs Upson volunteered to provide means for the further carrying out of Dr Upson's aim An organization was formed consisting of Dr Edward Kirk, chairman, Drs J Madison Taylor, Charles E DeM Sajous, Nathaniel Gildersleeve, Herman Prinz and Arthur Hopewell Smith, all of Philadelphia The executive committee of this commission selected a board of associate experts, in lines which include the more cognate subjects, consisting of Drs DeForest P Willard, orthopedist, Wendell Reber, ophthalmologist, G Morris Piersol, internist, Charles R Turner, prosthetist, Matthew H Cryer, oral surgeon, John V Mershon, orthodontist, Seymour DeW Ludlum, neurologist, Ralph Butler, rhinologist and laryngologist, and Edward A Schumann, pediatrist, all of Philadelphia The commission proposes to issue a bulletin from time to time containing scientific communications and the like and the commission also desires to afford every facility in its power to research workers and will be glad to receive communications, suggestions and criticisms, which should be addressed to the Upson Foundation, in care of The Thomas W Evans Museum and Dental Institute, Spruce and Fortieth Streets, Philadelphia

Death of Metchnikoff—The cable reports the death of Prof Elie (Ilya Ilyich) Metchnikoff, the discoverer of the phagocyte, aged 71 He was born in Sivanopka amid the steppes of southern Russia, where his father, an officer of the Imperial Guard, bred horses for the Russian cavalry His mother was a Polish Jewess He became especially interested in natural science at the age of 8, when a medical student with a taste for botany came to tutor an older brother After obtaining a degree corresponding to our Bachelor of Arts at the University of Kharkoff, Metchnikoff studied in Giessen under Leuckhart, at Gottingen under Henle, and at Munich under Siebold, devoting himself almost from the first to zoology and anatomy He never took a degree in medicine His researches on embryology and microzoology were done mostly at the Naples Marine Station In 1870 he returned to Russia and was professor at Odessa for twelve years but resigned his chair then on account of the political disturbances following the assassination of Alexander the Second by a student at that university He returned to Italy, settling at Messina and it was there that he discovered phagocytosis from research on the individual cells of sponges and other low forms of animal life In 1886 he returned to Russia and was appointed director of a bacteriologic station at Odessa, but the influx of patients that had been bitten by dogs and wolves was so great that he had scant time for research and resigned his post After wandering about Europe for a time he settled in Paris and offered his services to Pasteur, who at once placed a laboratory at the Pasteur Institute at his disposal Here he had remained ever since, declining offers from Russia and America and devoting himself to his studies and teaching He was appointed subdirector of the institute some years ago, and the Osiris bequest to the institute of over $2,000,000 has supplied the means for exceptional research on large numbers of monkeys This has proved particularly useful in studying the chemical prophylaxis of venereal diseases In 1908 the Nobel prize was divided between Metchnikoff and Ehrlich, the $20 000 which Metchnikoff thus received he devoted entirely to scientific research

In 1911 he went to Russia to study the plague bacilli in the Astrakhan district His earlier published works were on cholera, plague and anthrax, the comparative pathology of inflammation, and on immunity in infectious diseases In 1903 he published his Etude sur la nature humaine, essai de philosophie optimiste '

With Besredka, in 1912, and later, he insisted on the superiority of sensitized living typhoid bacilli for antityphoid vaccination, their experimental research having shown that even when large numbers of the living bacilli are injected subcutaneously, none are found in the excreta

Metchnikoff s later studies have been on means to avoid pathologic old age It was his view that an anthropoid mother eons ago gave birth to freak children They had abnormally large brains, lodged in an abnormally large skull, permitting intellectual development and thus were the first human beings But they were freaks, the man's body was not ready for the man's brain Man, he declared, is the victim of a lot of troublesome rudimentary organs that the monkeys had not had time to get rid of and others that man has not had time to develop Chief among these 'disharmonies" is the large intestine which is necessary only to the digestion of grass and grain eaters Its only use seems to be to breed poisonous toxins, mostly the production of the colon bacillus By overcoming the production of indols and phenols by the colon bacillus, much of these toxins can be avoided, and he was convinced that acid-producing bacteria accomplished this task of subjugating the colon bacilli

FOREIGN NEWS

Sodré, a Physician, Appointed Prefect of Rio—Our Rio exchange, the *Brazil Medico,* relates that its founder and editor in chief, Prof Azevedo Sodre, has been appointed prefeito of the federal district, a position equivalent to governor of the city and district of Rio de Janeiro He has long held the chair of clinical medicine in the University of Rio, and served as president of the Brazilian Association of the Medical Press, and for the last year as chief of the department of public instruction

WAR NOTES

Base Hospital Unit Established—A base hospital unit is being organized at the German Hospital, New York, under the direction of Dr Frederic Kammerer, who has just returned from active service with the German army

Surgical Units Reach Berlin—The two American surgical units, headed respectively by Drs John R McDill, Milwaukee, and Dr Paul F Martin, Indianapolis, have arrived in Berlin and left, June 24, to join the war hospitals to which they have been assigned Dr McDill is to be stationed in Cologne and Dr Martin in Budapest Each unit consists of four surgeons and four nurses

Great Britain Will Not Permit Red Cross Shipments to Central Powers—It is reported from Washington that Great Britain has again refused a plea of the American Red Cross for permission to make additional shipments of Red Cross supplies to Germany and Austria and that Great Britain cannot entertain the suggestion that supplies be sent under guarantee or that their distribution will be supervised by a satisfactory commission of Americans

OUR TROOPS ON THE BORDER

Comforts in Border Hospitals Needed—In reports from El Paso it is stated that of the twelve pavilions of the base hospital at Fort Bliss, only two have electric fan equipment and the temperature ranges more than 100 Twenty additional pavilions in connection with the hospital have already been built, and a laboratory is to be provided Each pavilion will accommodate thirty-eight patients

New Base Hospital—A letter has been received at the American Red Cross headquarters from Dr William J Mayo, Rochester, Minn, stating his willingness to organize a base hospital, the personnel and equipment of which is to be furnished by the Mayo Clinic The number of medical officers in such a hospital is twenty-three, the number of beds 500, and the cost of the equipment is $25,000

Red Cross Supplies for Texas—Supplementary instructions for the collecting of military relief supplies for the American troops on the Mexican border just issued by the American Red Cross name six intermediate depots in railroad centers of the United States where supplies should be sent to be assorted and classified, and three distributing depots from which final distribution of supplies be made to troops at the front The points selected and districts embraced are as follows

New York District Red Cross Supply Depot Bush Terminal No 19 39th Street and Second Avenue South Brooklyn N Y includes all New England and the eastern part of New York State

Cincinnati District headquarters in Cincinnati includes Pennsylvania the western part of New York New Jersey Delaware Maryland West Virginia Ohio and Indiana

Chicago District headquarters Red Cross Supply Depot Clearing Argo District Chicago includes Minnesota Wisconsin Michigan and Northern Illinois

Kansas City District Red Cross Supply Depot care Montgomery Ward & Co Kansas City Mo includes North and South Dakota Nebraska Iowa Northern Missouri and Northeastern Kansas

Denver District headquarters in Denver includes Montana Idaho Wyoming Utah and Northern Colorado

San Francisco District headquarters Red Cross Supply Depot care Mr A B C Dohrmann San Francisco includes Washington Oregon Nevada and Northern California

The headquarters of the following additional three districts are designated distributing depots

Douglas Ariz headquarters Red Cross Supply Depot care Mayor W H Adamson for all of Arizona and the southern part of California (Los Angeles)

El Paso Tex Red Cross Supply Depot 516 San Francisco Street El Paso for all supplies from intermediate depots at Kansas City Denver San Francisco and from all territory west of Kansas not otherwise embraced

San Antonio, Tex, District headquarters Red Cross Supply Depot, Avenue E and Fourth Street, San Antonio for all supplies from intermediate depots at New York, Cincinnati Chicago, and from all southern states situated to the east of a north and south line through the western boundary of Kansas

Each depot is under the charge of a manager who has general supervision over the receipt, storage and shipment of supplies and of their final disposition

LONDON LETTER

London, June 26, 1916

The Causes of the Falling Birth Rate

A report of the commission of inquiry into the falling birth rate has aroused a good deal of commentary in the press Dr Mary Scharlieb writes that the increase of excessive stature among women does not affect the birth rate at all, but the question of girls' sports is a subject for special attention from the medical profession, parents and heads of schools The statement that violent exercise prevents women later in life from nursing their children is not true It is largely a question of habit and imitation The limitation of families is due to many causes and not always to selfish ones The question is whether the government ought not to attempt some plan of scholarships or insurance, say 2 cents a week paid from birth by the parents, the government to pay an equal sum, the total to be used when the child needs it for education, apprenticeship, or a good start in life

The important bearing of the question of housing on the birth rate and on the prevention of infant mortality is emphasized by Miss Halford, secretary of the Association of Infant Welfare and Maternity Centers, who says that landlords refuse to accept as tenants people with large families Other tenants object to the noise Large families, for whom basements are often the only housing accommodation available, suffer in health At an infant welfare center the difference in children born and bred in basements was pointed out Professional women have in many cases come to regard themselves as a class destined to celibacy The opinion is expressed that the ban on the marriage of women officials (temporarily relaxed from necessity during the war), which is imposed by government departments, ought to be removed This attitude has its effect on other than government employers, and means the enforced retirement on marriage of women who have been earning good incomes

The Demand for Army Surgeons

The army has now taken 11,000 physicians from private practice and is asking for another 4,000 This, with the 1,500 medical officers in the permanent service, gives a total of 16,500 In a letter addressed to the civilian medical profession, Sir Alfred Keogh, director general of the army medical service, points out that the profession has now been entrusted in a very special manner with the responsibility of working out in cooperation with the government the mobilization of the whole of the medical services of this country for its civil needs on such lines as shall enable the pressing requirements of the army to be met with the least possible injury to the civil population He is convinced by close and continuous observation of the problem that it is only by means of such a national organization of medical services, effected by the profession itself, that the profession can be assured of serving the country with the maximum of efficiency and with the minimum of disturbance and friction in the case of individual physicians The scheme adopted by the army authorities does not touch the question of how physicians over military age who do not come forward are to be dealt with, and this is its weak point Sir Alfred Keogh has no authority to dispose of these men But unless these men can be moved to areas where their services are required, the fullest efficiency cannot be attained For example, three physicians over military age may choose to remain in one area while another area has no physician This difficulty can be solved only by the application of compulsion to the whole medical profession There is no very cogent reason why compulsion should not be applied, and there are many reasons why it should be The necessity of carrying on and winning the war overrules all personal considerations Medical men, old as well as young, must go where they are required As the success of Sir Alfred Keogh's scheme depends, to a great extent, on the possibility of moving older physicians to the places where they are required, it is suggested that a committee of representative physicians should be formed and a scheme of general mobilization drafted by them Parliament, which has dealt with munition workers, should not hesitate to deal also with men on whose labors the future health of the people, and especially of the children, so largely depends

A State Medical Service

The insurance act marked a great advance in the government control of medical service But the physicians employed are simply under a contract to attend the wage earners in the country, and otherwise are free to do as they will It is now generally admitted both by the friends and the foes of the act that much modification is necessary, and this will certainly take the direction of further state control which will probably terminate in time in a state medical service in which the physicians will be officials in exactly the same position as other government officials, or like the permanent army surgeons A complete system of specialists, physicians, health officers, nurses and hospitals will probably be evolved While it may be admitted that both the public and the profession will lose something by the reduction of the independent physician to an official it cannot be gainsaid that the scheme does not offer great advantages Dr J P Walker, health officer of the Isle of Wight, makes the following trenchant comments on the drawbacks of the present system, which he regards as on a wrong basis altogether Every physician is now in competition with his fellows for his daily bread, and this competition is good neither for the physician nor his patients Medical success is not necessarily dependent on a physician's skill and knowledge, it depends on much besides, for example, the size of his house, the luxuriance of his motor car, the charm and ability of the physician's wife, all these influence his worldly success But should he venture to criticize those who employ him? How fares he, for example, should he tell his best paying patient there is nothing really the matter with her, that she needs work, and that employment would rob her of all her fancied ailments? Should he tell his chief magnate that the death rate from consumption is due to his germ-breeding cottages, how would he fare? Dr Walker goes on to show how impossible it is for physicians to keep up their knowledge by attending hospital, except in a few cases, and how the public suffers thereby It also points to the bad distribution of physicians, giving in 1910 one physician to 356 persons in Hampstead and one to every 5,582 in Shoreditch

Vital Statistics

The report of the registrar-general, Dr Stevenson, on the vital statistics for 1914, has just been issued The population of England and Wales in the middle of that year is estimated at 36 960,684, made up of 17,877,052 males and 19,083,632 females The marriages during the year numbered 294,401, giving a rate of 15 9 persons married per thousand population, or 0 2 above the rate for 1913, and 0 4 above the average rate in the decade 1901-1910 It was the highest rate recorded since 1907 The provisional figures for 1915 indicate a further rise of 3 5 per thousand The birth rate in 1914 was 23 8 per thousand, being 2 1 below the average for the preceding decennium It was the lowest on record, the next lowest being 23 9 in 1912, and the highest 36 3 in 1876, since which date the rate, with a few insignificant exceptions, has fallen year by year The total number of births registered was 879,096, 447,184 were males and 431,912 were females Tables are given showing that while the proportion of women of childbearing age to the total population rose from 23 1 per cent in 1871 to 24 9 per cent in 1911, the proportion of these women who are married fell from 49 6 to 47 7 per cent, and the average age of married women of childbearing age has steadily increased While these changes would tend to influence the birth rate, the first making for its increase and the other two for its decrease the conclusion is that "the net fall in the birth rate of the present day must be due to a diminution in the fertility of these women from whatever cause including that resulting from increase in their average age" From tables showing the birth rates of different parts of the country, it appears that the rates are highest in Wales, next highest in Lancashire, Cheshire, Yorkshire and the counties north of them, and much the lowest in the South These differences are attributed to real differences in fertility Compared with 1913, there was an increase in the rural districts of the North and in the smaller towns in Wales, and a decrease in all other areas except the county boroughs of the North While the birth rate was lower than in 1913, the death rate was higher, the rate of natural increase for 1914 being only 0 1 above that of 1911, which was the lowest yet recorded

The total number of deaths registered in the year was 516,742 This gives a rate of 14 per thousand population, 0 2 higher than in the preceding year but 1 4 below the average for the ten preceding years Of the total number of deaths registered, 91,971, or 17 8 per cent, were those of infants under 1 year of age This corresponds to an infant mortality rate of 105 per thousand births, being 14 per thousand below the average for the preceding ten years, and the lowest on record, excepting an equal rate in 1910 and a lower one in 1912 The provisional infant mortality rate for 1915 shows an increase to 110 per thousand births—no doubt because of the disturbing influence of the war

PARIS LETTER

Paris, June 22, 1916

The War

HEAD WOUNDS CAUSED BY PROJECTILES

At a meeting of the Societe de Chirurgie de Paris, Dr Hartmann, professor of clinical surgery at the Faculte de medecine de Paris, presented a report of 154 cases of craniocerebral wounds caused by projectiles, which report was submitted to the society by Drs Okinczyc, Halphen, Prat, Monod, Metivet In regard to the distribution of these wounds, the most frequent are those of the parietotemporal (from 60 to 65 per cent), the next those of the frontal (20 to 30 per cent), and then those of the occipital region (6 to 18 per cent) Generally (130 cases out of 150) there was an obvious complete fracture of the skull, and in eighty-five of these the dura mater was injured The brain generally presented injuries which were more extensive than the lesion of the dura mater would lead one to expect With regard to the symptomatology of these wounds, the reporters insist on the fact that the patients suffering from cranial lesions sometimes present no functional trouble of any kind They are able to walk and to speak and to move in a normal manner without any difficulty, indeed, they sometimes do not even have the slightest headache As a result of these facts, soldiers suffering from serious head injuries are sometimes sent to ambulance stations for minor wounds In other cases definite symptoms exist, some of them general, such as headache, stupor, coma or delirium, and other localizing symptoms, such as jacksonian epilepsy and visual disturbances The prognosis in these lesions is grave, and varies not only according to their intensity but according to the region affected The most serious are the lesions of the temporal region, next come those of the parietal region, then those of the frontal region, and finally those of the occiput In reality, the death rate is often higher than that indicated by the statistics of most surgeons, in the first place because those who operate at the front do not learn of the deaths from secondary complications of those patients whom they have been obliged to send to the rear, while on the other hand, the surgeons in the rear do not see those smashes of the skull which, being followed almost immediately by death, have not allowed of transportation The most common cause of death is meningitis This occasionally makes its appearance at some distance from the original wound, a fact which is explicable either by the depth and length of the track ploughed by the projectile in the cerebral substance, or by the production of infection along the cracks in the bone

With regard to treatment, Prat, Metivet, Okinczyc and Monod are in agreement that it is indispensable to practice an immediate exploration, exposing the bone in all firearm wounds of the skull Metivet prefers a crucial incision, the others a flap Prat insists on the necessity of opening the skull even when the bone lesion is small He does not, however, consider it necessary to follow up all the cracks which radiate from the point of penetration As a guide for the diameter of the trephining, he takes the extent of the lesion in the dura mater and he enlarges the opening until he finds himself in the presence of a normal dura The dura mater, if it does not pulsate, must be freed and the cerebral substance exposed, all fragments removed and wick drainage installed

In the last session but one of the Reunion medico-chirurgicale de la XVI-e region at Montpellier, two resolutions in the following sense were voted First, on account of the very reserved prognosis which should always rule in cases of serious craniocerebral injury, it is not considered prudent to return to active service those who have suffered from such lesions If they do not present any serious disturbances they may be kept in the rear formations under medical observation, or they may be sent to auxiliary services, care being taken that they shall be selected for work which does not expose them to violent effort or to sudden changes of temperature or atmospheric pressure On the other hand, if there are still evident unfavorable symptoms, they should be discharged from the service

The second resolution dealt with the question of communicating to the special services in the interior of the country details concerning the injuries, operations undergone and the general condition of wounded soldiers In order that this may not be entrusted to the wounded man himself, or to some intermediary who may be negligent, it is recommended that these communications should be made on a small register of wounds and injuries similar to the individual military pass These resolutions, after having been voted by the Reunion medico-chirurgicale de la XVI-e region, have also been submitted to the recent common session of the Societe de chirurgie de Paris and the Societe de neurologie de Paris (Paris Letter, June 1, 1916)

THE RIGHT OF THE WOUNDED TO REFUSE TREATMENT

Continuing the discussion opened last week at the Academie de medecine (The Journal, July 15, 1916, p 217), on the right of a soldier to refuse treatment, Professor Grasset of Montpellier laid stress on the urgent necessity of obtaining an official or even legislative interpretation of the instructions of April 5 1915 (The Journal, Aug 21, 1915, p 729) These instructions dealt with treatment intended only for immunization or cure, they did not cover interventions for diagnostic purposes They defined the simple and noncutting methods of treatment, such as massage, mechanotherapy, thermotherapy and electrotherapy, which the wounded may not refuse As the result of this drafting, numbers of the wounded refuse slight operations for diagnostic purposes, such as lumbar puncture and the taking of blood for Wassermann reactions In the centers where a considerable number of psychoneurotic cases are concentrated these refusals have been particularly numerous The recalcitrants are not always malingerers but sometimes they are persons who have a real fear of pain or others who, having received a wound which keeps them away from the front, have no desire to see their cure hastened or to diminish the amount of indemnity which they receive In these circumstances the urgency of the need for setting the matter at rest is evident If this question is not settled very soon the time will come when men will refuse not merely a lumbar puncture but a simple bleeding, a wet cupping or a hypodermic injection

MEDICAL EXAMINATION OF PHYSICIANS UNFIT FOR SERVICE

M Justin Godart, undersecretary of state for the military health service has just ordered a reexamination of the physicians who have been rejected as unfit In a circular on this subject, addressed to the regional directors, the secretary of state says 'There exists in every region a certain number of physicians rejected as unfit for service whose unfitness is hardly confirmed by their appearance or by the activity which they daily display In a certain number of cases this state of affairs has unfavorably affected public opinion and has caused these physicians a certain amount of moral prejudice I have, therefore, decided to submit them to reexamination This examination must be particularly careful and it must be carried out under your direction and in your presence by two surgeons of the army already chosen by the recruiting commissions You may also consult specialists should you think it necessary"

INAUGURATION OF A SCHOOL FOR THE REEDUCATION OF CRIPPLES

The union of foreign colonies in France in favor of victims of the war, in which are grouped eighteen foreign colonies under the presidency of M Shoninger, honorary president of the American Chamber of Commerce, has founded at the Grand-Palais in Paris a school for the vocational reeducation of the wounded and cripples of our army This school, which has just been inaugurated by M Justin Godart, undersecretary of state for the military health service, contains workshops for machinery, electrical fittings, joinery, cabinet making, locksmith's work shoemaking, saddlery, harness making and tailoring The men working in these different shops are paid at the rate of 15 centimes (3 cents) per hour and as soon as their work becomes productive they receive the price of it To this school is attached a section where the pupils study French, stenography, typewriting, accounting, industrial and architectural drawing and English.

Marriages

Charles Edward Peters, M D, National Soldiers' Home, Danville, Ill, to Miss Frances Pitt Stack of National Military Home, Marion, Ind, July 3

George Louis Alexis Hamilton, M D, Kansas City, Mo, to Miss Louise Alice Moening of Washington, D C, at Marceline, Mo, July 6

William Breese McWhorter, M D, Acting Assistant Surgeon, U S P H S, Rome, Ga, to Miss Annie Berry, at Athens, Ga, June 17

Chester Arthur Skelton, M D, St Elmo, Chattanooga, Tenn, to Miss Gertrude Schultz of Cleveland, Tenn, July 2

John Allen Gentry, M D, Atlanta, Ga, to Miss Marguerite Love Sasser, Sasser, Ga, in Atlanta, June 25

James Howard Anderson, M D, Marytown, W Va, to Miss Marguerite Emery of Kenton, Ia, June 28

John Elias Freed, M D, Terre Haute, Ind, to Miss Mary McManus of Brazil, Ind, in Paris, Ill, June 21

Alexander David McCrackin, M D, Kellogg, Ida, to Miss Florence McFarland of Bovill, Ida, June 29

George Minor Mackenzie, M D, to Miss Eleanor Whiteside Hobson, both of New York City, June 22

Martin Hayward Post, Jr, M D, St Louis, to Miss Dorothy Lee Rice, New York, July 22

Charles Augustus Young, M D, to Miss Jettie L Coffman, both of Rio, W Va, July 3

Lawrence Hempson Mayers, M D, to Miss Antoinette Redfield Hale, in Chicago, July 1

Fred Erland Deal, M D, Weir, Kan, to Miss Winnie George of Slater, Mo, June 30

Hartwell Weaver, M D, to Miss Imogene Slayden, both of Dickson, Tenn, June 17

Charles A. Cattermole, M D, to Miss Alberta Long, both of Pueblo, Colo, July 1

Deaths

Alfred Cleveland Cotton, M D, Chicago, Rush Medical College, 1878, aged 69, a Fellow of the American Medical Association, a veteran of the Civil War, in which he served as drummer in Company F, One Hundred and Thirty-Seventh Illinois Volunteer Infantry, died at his home, July 12, from heart disease Dr Cotton had been engaged in practice in Chicago since 1878, specializing in pediatrics during later years He was professor of pediatrics in Rush Medical College, attending physician to the children's department of Presbyterian Hospital and consulting physician to the Central Free Dispensary and Jackson Park Sanitarium For many years Dr Cotton was physician in charge of the infectious disease ward of Cook County Hospital and he was once City Physician of Chicago in charge of the isolation hospitals and the bridewell He had been president of the Illinois State Medical Society, Chicago Medical Society, American Pediatric Society, Chicago Pediatric Society and Chicago Medical Examiners' Association and medical referee of the Prudential Insurance Company of America He was the author of textbooks on "Diseases of Children," "Anatomy, Physiology and Hygiene of the Developing Period," and "Care of the Infant," in addition to many monographs on pediatric and allied subjects

Surg Charles Poindexter Wertenbaker, U S P H S, aged 56, one of the oldest and most esteemed officers of the corps, died at his home in Charlottesville, Va, July 12 Dr Wertenbaker was a native of Charlottesville, and was a graduate of the Medical Department of the University of Virginia, Charlottesville, in 1882 After postgraduate study in the medical schools and hospitals of New York he entered the Marine Hospital Service as assistant surgeon, Aug 18, 1888, was promoted to passed assistant surgeon, Sept 4, 1892, and was made surgeon, Feb 16, 1904 He was a member of the National Guard of Virginia for thirteen years before entering the United States service Dr Wertenbaker was a Fellow of the American Medical Association, a member of the Association of Military Surgeons of the United States, and its president in 1911 He was well known as an expert on communicable diseases, and of late years had been especially interested in the tuberculosis problem among the negroes of the South Dr Wertenbaker was also sanitary director of the Jamestown Exposition In his death the Public Health Service loses one of its most efficient officers and the medical profession a physician of high attainment

John F W Whitbeck, M D, Rochester, N Y, University of Pennsylvania, Philadelphia, 1870, aged 72, a Fellow of the American Medical Association, president of the Medical Society of the State of New York in 1912, and Rochester Academy of Medicine, and a fellow of the American College of Surgeons, formerly surgeon general of the state and commissioner of the Rochester Board of Health, one of the most prominent surgeons of western New York, for many years president of the staff of the Rochester General Hospital and president of the board of managers of the Iola Sanitarium, died at his home, July 3, from acute dilatation of the heart The Rochester Academy of Medicine and Monroe County Medical Society, at special meetings, adopted resolutions eulogistic of Dr Whitbeck and expressive of affection and regret

Charles Hamilton Hughes, M D, St Louis, Washington University, St Louis, 1859, aged 77, a Fellow of the American Medical Association, a well-known neurologist and medicolegal expert of St Louis, major of cavalry and surgeon in charge of hospitals during the Civil War, formerly superintendent of the Fulton, Mo, State Hospital for the Insane, and lecturer on medicine, professor of nervous and mental diseases and president of medical college faculties in St Louis, one of the founders of the Marion-Sims Medical College, a member of the American Academy of Medicine, Association of Military Surgeons of the United States, and once president of the Mississippi Valley Medical Association, died at his home, July 13

John Patrick Corrigan, M D, Pawtucket, R I, New York University, New York City, 1883, aged 59, formerly a Fellow of the American Medical Association, a member of the Rhode Island Ophthalmological and Otological Society and formerly president of the Pawtucket Medical Association, surgeon to the eye and ear department of the Memorial Hospital, Pawtucket, who had been studying four years for the priesthood and was about to enter the Dominican Order, died in Providence Hospital, Washington, D C, July 6, from heart disease

Joseph Addington Gale, M D, Roanoke, Va, Bellevue Hospital Medical College, 1866, aged 73, a Fellow of the American Medical Association, a member of the Southern Surgical and Gynecological Association, president of the Medical Society of Virginia in 1903-1904 and a Fellow of the American College of Surgeons, chief surgeon of the Norfolk and Western Railroad for twenty-five years, hospital steward in the Confederate Army during the Civil War, died at his home, July 5

Francis Sorrel, M D, Washington, D C, University of Pennsylvania, Philadelphia, 1848, aged 89, assistant surgeon, U S Army, from 1849 to 1856, a member of the legislature of California in 1860 and 1861, a Confederate medical officer during the Civil War and medical director of the General Hospital, Richmond, Va, died in his apartments, in Washington, June 30

Joseph William Henry, M D, San Francisco, University of Southern California, Los Angeles, 1897, aged 45, a Fellow of the American Medical Association, a member of the staff of St Mary's Hospital, San Francisco, who was taken ill while making an automobile trip, died at O'Connor's Sanitarium, San Jose, June 28

Joseph Camp Phillips, M D, Port Arthur, Tex, Tulane University, New Orleans, 1908, aged 40, a Fellow of the American Medical Association, a specialist on diseases of the eye, ear, nose and throat, formerly professor of chemistry in Mississippi Medical College, Meridian, died at his home, July 3, from meningitis

Henry Horlbeck, M D, Columbia, S C, Medical College of the State of South Carolina, Charleston, 1897, aged 43, a Fellow of the American Medical Association and a specialist on diseases of the eye, ear, nose and throat, died in Summerville, S C, May 6, from laryngeal and pulmonary tuberculosis

Thomas Irwin, M D, Moberly, Mo, Washington University, St Louis, 1873, aged 68, formerly a Fellow of the American Medical Association, consulting surgeon to the Wabash System and local surgeon to the Missouri, Kansas and Texas Railway, died at his home, July 5

Edward N Flynn, M D, Jeffersonville, Ind , Hospital College of Medicine, Louisville, 1897, aged 48, a member of the Indiana State Medical Association, mayor of Jeffersonville from 1905 to 1909, died at the home of his sister in that city, July 9

Thomas Henderson, M D, Detroit, Detroit College of Medicine and Surgery, 1886, aged 61, a member of the Michigan State Medical Society, president of the board of education of Detroit in 1898-1899, died at his home, July 4, from uremia

E W Dean, M D, Hiram, Ga , Medical College of Georgia, Augusta 1885, a member of the Medical Association of Georgia, a well-known banker and physician, died in a sanatorium in Atlanta, July 4, after a surgical operation

William H Winkler, M D, Applecreek, Ohio, University of Wooster, Cleveland Ohio, 1872 aged 72, a practitioner and druggist of Applecreek for thirty-one years, died at his home, July 6, from cerebral hemorrhage

Erwin Eugene Britton, M D, McClure, Ohio, Cincinnati College of Medicine and Surgery 1879, aged 66, for six consecutive terms mayor of McClure, died at his home, about June 28, from cerebral hemorrhage

John Philip Van Voorhis, M D, Fairdale, Ill , Eclectic Medical Institute, Cincinnati 1856, aged 82, for more than fifty years a practitioner of Fairdale, died at his home, July 4, from senile debility

William Washington Denny, Pink Hill N C (license, thirty years' practice, 1890), aged 83, an honorary member of the Medical Society of North Carolina, died at his home, July 2 from senile debility

James Theodore Roan, M D, Waycross, Ga , Southern Medical College Atlanta 1882, aged 63, formerly sanitary officer and county physician for Brooks County, Ga , died in Townsend Ga June 30

James Henry Waite, M D, Eagle Bridge, N Y , University of Michigan Ann Arbor, 1890, died in the Samaritan Hospital, Troy, N Y , from inoperable carcinoma of the stomach, June 9

Andrew Jacob Koontz, M D, Independence Va , College of Physicians and Surgeons, Baltimore, 1887, aged 57, a practitioner and druggist, died at his home June 20, from heart disease

Pearson William Yard, M D, Trenton, N J , New York University, New York, 1889, aged 52, died at his home, June 28, after an illness of six months, from septicemia due to the scratch of a pin

Charles L Stiles, M D, Owego, N Y , Geneva (N Y) Medical College 1865, aged 81, a member of the Medical Society of New York, died at his home, April 21, from cerebral hemorrhage

Lynn W Hendershott, M D, Mill Shoals Ill , College of Physicians and Surgeons, Keokuk, Iowa, 1881, aged 66, for more than forty years a practitioner of Illinois, died at his home recently

I R Aultman, M D, Meigs, Ga , Medical College of Georgia, Augusta, 1893, aged 56, a practitioner and druggist of Meigs since 1891, died at his home, June 23

Robert M Marshall, M D, Shenandoah Junction, W Va , University of Maryland, 1866, aged 72, for half a century a practitioner of West Virginia, died, June 22

Thomas Gillespie, M D, Kenosha, Wis , Hahnemann Medical College, 1880, aged 81, a clergyman, teacher and physician died at his home, July 4

George Salisbury Clarke, M D, Amherst, Mass , Toledo (Ohio) Medical College, 1892, aged 62, died at his home, June 22 from nephritis

Anna D Varner, M D, Wilkinsburg, Pa , Cleveland (Ohio) Homeopathic Medical College, 1896, died at her home, June 26

Samuel J Carpenter, Wichita, Kan (license, Kansas, 1901), aged 93, a practitioner for seventy-one years, died at his home June 29

Andrew Nicholas Sprafka, M D, Chicago, Northwestern University Medical School, 1914, aged 26, died in Chicago, June 22, from appendicitis

John C Tatman, M D, Oak Creek, Colo , Rush Medical College, 1867, aged 73, died at his home recently

James Lynd Savage, M D, Fargo, N D , Milwaukee Medical College, 1897, aged 43, formerly coroner of Cass County, died at his home, July 2, from heart disease

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

WINE OF CARDUI SUIT

(Continued from page 231)

May 23, 1916, Morning

TESTIMONY OF DR. ARTHUR HILL GRIMMER

The Court met pursuant to adjournment Dr Arthur Hill Grimmer was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR WALKER

Dr Grimmer testified that he is a physician practicing in Chicago He graduated from the Hahnemann Medical College of Chicago and is now adjunct professor of materia medica In addition to his work for the college, he practices medicine He teaches the homeopathic system of medicine and gives medicines by mouth

Q—How do you obtain the medicines that are used in your school of medicine? *A*—As all—first all of the drugs are proven on a healthy subject, on healthy subjects That is, before any drug is given to the sick there is a proving on the healthy

Q—What do you mean by provings? *A*—Healthy subjects are taken and examined by competent men to find out whether they are healthy or not, and when they are found to be normal they are given these drugs until they produce symptoms, either subjective or objective symptoms and those symptoms are recorded and kept track of and a great number of individuals showing those symptoms constitute what is known as a proving

To those symptoms are added all those cases of poisons or symptoms that arise from poisoning cases of various drugs

Then another class a smaller class of symptoms are added which are known as cured symptoms ' Symptoms that have never been brought out in a proving to have been—but have been cured repeatedly by the drug

All those symptoms taken together constitute what is known as a finished proving of the drug

Q—Suppose a prover—is that what you call the healthy person who is taking the drug? *A*—The prover, yes, sir

Q—Suppose a prover is taking it for the purpose of finding out whether a drug has any efficiency or potency how do you keep track of the man himself and under what conditions are the provings made so as to get the objective symptoms that you speak of, for instance? *A*—I do not know as I quite understand your question

Q—Well suppose I was a healthy subject and you were proving a drug on me How is the progress of the drug watched or controlled in the individual? That is what I mean by it *A*—Well the master prover the one who is in charge of the provings, of course interrogates the prover every day in regard to his symptoms and observes—at the present time bringing the methods up to the present date—they make analyses of the urine and of the blood the blood pressure and those things are observed now In former times until those things became more in vogue, they were not used The original provings only constituted subjective symptoms and they were kept track of by the master prover Any sensations or change from the normal in any way

Q—What is the distinction between subjective provings and objective provings? You say you take both the subjective and objective symptoms? *A*—Subjective symptoms are those symptoms felt by the patient and related by the patient Objective symptoms are symptoms that are observed changes that are observed by the physician in charge

Q—If the individual prover would perspire that would be an objective symptom? *A*—That would be an objective symptom

Q—And if you were informed that he had a pain in the back you could not see that and that would be a subjective symptom? *A*—Correct

Q—If his face flushes, or anything that is observable by pulse or eye or feeling, or in any other way by the doctor, that is objective is that right? *A*—Yes sir

Q—Now do you make any provings upon women? *A*—Yes, indeed

Q—How do you obtain the drugs that are used in your school of medicine for diseases that are peculiar to women? *A*—Those drugs are first proven on the healthy subjects healthy individuals and the symptoms are recorded and when we meet such a set of symptoms in the sick those are the drugs that are given

Q—In making your provings in those cases, are the provings on women? *A*—Yes they are on women

Q—You make your provings—you ascertain do you of the medicines as I understand it—you ascertain what medicines are efficacious or indicated in diseases of women, by the provings on women? *A*—Yes sir

Q—Now you in your giving of a sketch of your method of proving you included something else which I did not quite catch besides the symptoms, objective and subjective symptoms of the prover What was the other? *A*—Why, cases of poisoning, people who have been poisoned by drugs, the symptoms are observed, the physiological or toxic symptoms of the drugs are also noted and included in the provings

Q—In the case of poisons then, is that the way some of the poisons that you find to be poisons get into your pharmacopeia or into your medicine? *A*—They are admitted, those symptoms are admitted as only exaggerated provings, because they are such

Q—You take that as a proving? *A*—That is included in the proving

Q—What was the other? *A*—The other is where there has been repeated curings of symptoms that have not as yet been observed in the proving, perhaps the proving is incomplete, that is, there has not been sufficient provers to make it out, yet the administration of the remedy on the indications that were present has cured certain symptoms a number of times, then those symptoms are admitted as being genuine symptoms of the drug, because of the drug's ability to cure them

Q—In that latter case, is that in the treatment of the sick or medicine to the well? *A*—No, treatment of the sick

Q—That is a clinical observation of the action of the drug on the sick, is that right? *A*—Yes, sir

Q—And those three constitute the proving of a given drug? *A*—Yes, sir

Q—Are all drugs proved on the same person? *A*—No, sir, rarely so There are some provers who have proved more than one drug, but as a rule most of the drugs have been proven by a number of different provers, different sets of provers

Q—Do you make your provings in your school on neurasthenics? *A*—No, indeed, they are not included as normal human beings

Q—Is it part of your method—or state whether it is or not, assuming that a drug has been tried on one individual, to try another on that same individual during any period that the first drug could have affected him? *A*—Absolutely not

Q—Or her, either way What precautions, if any, doctor, are taken to prevent imaginary symptoms being incorporated in the homeopathic materia medica, if you know? *A*—The main precautions are that the—

Q—Speak out loud *A*—The main precautions are that the provers, after being ascertained to be healthy are then told that some of them have no medicine They are all taken—some of them are taking merely alcohol and water, unmedicated alcohol They do not know which one of the provers are taking the nonmedicated fluid, so that they are used as controls, two or three of them in a class of provers are used as controls, and are given no medicine and yet they are told to record their symptoms and are examined the same way as the other provers who are taking the medicine

Q—What do you mean by "control?" *A*—Those people who are taking no medicine who think they are taking medicine, and do not know but what they are taking medicine, are told to keep track of their symptoms in the same way as the others

Q—What is the purpose of that? *A*—Simply to eliminate the possibility of imaginary symptoms creeping in

Q—Now, doctor, are you familiar with the two drugs known as—I withdraw that Are you familiar with the drug known as carduus benedictus? *A*—I am

Q—How long have you been familiar with that drug? *A*—Practically during most of my practice

Q—State whether or not in your school of medicine, carduus benedictus is a drug in frequent use where indicated, in diseases of women?

Mr T J Scofield—That is objected to and I move to strike out the answer till I get my objection in I am not objecting to his stating what he knows about it in his personal knowledge of the practice, but for him to be permitted to say that it is frequently used in his school, it seems to me would be very objectionable, and necessarily based on hearsay

Mr Walker—I will change the question, and put it in another way

Q—How frequently within your knowledge, is carduus benedictus used in the homeopathic treatment for women's diseases?

Mr T J Scofield—That question, if the Court please, I object to

The Court—Your personal knowledge, not from reading, but from actual observation

A—Quite frequently

Mr Walker *Q*—Do you know what the custom is among your school of medicine in connection with that drug and its use? *A*—Yes

Mr T J Scofield—That is objected to, if the Court please

The Court—He may answer

To which ruling of the Court the defendants, etc., excepted.

A—It is in quite frequent use

Mr Walker *Q*—Now, state whether or not, Dr Grimmer, the drug known as carduus benedictus has provings in your school of medicine? *A*—What is the question?

Q—Are there provings of that drug in your school of medicine? *A*—There are.

Q—Carduus benedictus? And when you speak of provings, you have reference to the methods that you have related as to the provings of drugs as just described, is that right? *A*—Yes, sir

Q—Are you familiar with the drug known as viburnum prunifolium? *A*—I am

Q—State whether or not that drug is used in your school of medicine in diseases that are peculiar to the female? *A*—It is

Q—How long have you known of that drug as being in use in the troubles that arise—that are peculiar to the woman? *A*—Since I have been in practice

Q—State whether or not, as far as—whether in your knowledge that is a drug of frequent use in the profession in your school? *A*—It is

Q—Are you accustomed—have you knowledge of the custom in your profession in the use of that drug in diseases of women? *A*—I have

Q—Now, Doctor, will you please tell the jury whether or not you are familiar with the organs of the woman, the genital organs the organs of generation? *A*—I am

Q—You say you are? *A*—Yes, sir

Q—Before I get to that subject, Judge Hough calls attention to the fact that I neglected to ask you whether or not in your school of medicine viburnum prunifolium has been proven? *A*—It has

Q—As you have illustrated before the method? *A*—Yes, sir

Dr Grimmer stated that he has treated practically all functional disturbances peculiar to women He does not perform surgery He has used viburnum prunifolium and carduus benedictus many times with very good results About 10 per cent of female diseases are surgical cases and not over 5 per cent in his experience The witness stated that these medicines are of value when surgery is indicated

The witness has treated all cases from early infancy to old age, through puberty to the menopause The witness stated roughly, 50 per cent of girls suffer at the time of puberty, and that some of the women who consult him seem to have a fair knowledge of what is the matter with them from their symptoms On the other hand, many of them are mistaken He does not always make an examination before he treats the case At least 75 per cent of his cases are treated without examination and he considers that he has had very excellent results He considers that viburnum prunifolium and carduus benedictus are indicated in practically anything that women may have peculiar to them, any of their sicknesses He mentioned amenorrhea, menstrual disturbances of all kinds, leukorrhea, inflamed conditions of the uterus and tubes, and the vagina threatened abortion, all of which he has treated with good results The witness mentioned cases of sterility which might be treated by medical means

The witness has never used viburnum prunifolium and carduus benedictus in any way except in alcoholic solutions He stated that the general rule in homeopathic practice is to give the smallest dose possible to effect the cure as the best dose He defined high dilution as low strength

Q—Well, what is the theory upon which your school get results or use their medicines as to such small doses? *A*—The theory is known as the law of similars, that which will produce on the healthy similar symptoms to what we meet in the sick will cure those symptoms in all curable cases In some cases we all admit they are incurable In all curable diseases that law is universal

Q—How do you establish the fact that there is efficiency in the various infinitesimal doses that you give? *A*—By two processes By proving it on the healthy and by curing the sick when we meet these similar symptoms in the sick

Q—In your provings, in your proving a drug do you prove it at different dosages—I withdraw that How do you ascertain that any proving of the drug, the minimum or very small dose—has more efficiency—do you prove that? *A*—By getting the effects on the healthy giving it through long periods of time to the healthy until symptoms are developed Very frequently our best provings are made with the high potency

Q—When you say high potency— *A*—The 30th potency

Q—That means the smallest amount of drug, is that right? *A*—Yes, sir

Q—You have said, doctor, that there are certain percentages which you treat without a physical examination Well, why is that? *A*—Why, a great many object to it, and in young girls we hesitate to make an examination unless it becomes absolutely imperative

Q—Do you make the examination wherever it is permitted? *A*—Yes sir, I do

Q—State whether or not as a physician you deem it advisable that where it can be done, the examination be made? *A*—Wherever it seems necessary I always insist on it Then if they refuse of course, we can only treat them and tell them that the responsibility is with them

Mr Walker—Now, doctor, is there any difference—well, I know this answers itself I was going to ask the doctor, Judge, whether there was any difference in taking a drug that was poisonous and one that was not in the quantity that he would give it, and I see that would be ridiculous

Q—Doctor, what attention do you pay to the alcohol as alcohol in the remedies that you give in your profession? *A*—We regard it as being negative, the alcohol that is in the drugs that we give

Q—Do you make any distinction between alcohol as alcohol and alcohol when used in combination with a drug or with medicines? A—Yes. When we give alcohol as alcohol, we give it for the stimulating effects and give it in doses sufficient to obtain those effects

The witness stated that he had heard the Home Treatment Book for Women read He stated that he has treated cases of vaginitis and gonorrhea and he would consider medicine by mouth invariably indicated in these conditions and that this medicine contains alcohol He would consider the alcohol in the hypothetic medicine as being negligible He would not consider that the alcohol would heighten the passions of a girl at puberty, and he would not consider that it would give her an alcoholic habit He stated that medicines are always indicated during pregnancy for symptoms He would not consider the hypothetic medicine as injurious to the health because of its alcoholic content Dr Grimmer stated that a medicine could act both as a sedative and a tonic He would consider that the hypothetic medicine might be indicated at the time of the menses, and that it could not mask a cancer He would say that about 60 per cent of women in the menopause suffer with distressful symptoms

Q—Now in your school do you combine drugs? A—It is not in accordance with the tenets of the *homeopathic teaching* although many of the men, clinicians clinically do combine and use the drugs and *most of our* pharmacists give out combinations with very good effects

Q—In your treatment do you give two different drugs to the same patient—I mean one drug following the other, like— A—Very frequently one drug will complement another, yes

Q—How do you give it as you, yourself practice? A—In my own practice I give one drug at a time, and then if I get my results I may follow it with another that is very similar to that drug

Q—That is take carduus benedictus for instance, at one stage, then could you follow that up would it be proper in your method to follow that up with viburnum within an hour or two? A—They are compatible

Q—Those two? A—Yes

Q—Is that the way you use drugs when you use two drugs? A—If I use *two drugs* yes sir

Q—What is the largest amount of alcohol in each dose of the homeopathic medicines which you give? A—Most of the drugs that I give are given in dilution so that the alcohol is practically negligible

Q—A very small amount? A—Yes, when I do use the tinctures, then it would be only a few drops of the tincture

Q—Doctor have you looked into the subject at all as to what amount of alcohol can safely be taken by an adult without a bad effect?

Mr T J Scofield—I object to that

Mr Walker—I mean in a medicinal solution

Mr T J Scofield—If he knows anything about it, that is a different proposition

THE COURT—That is another way of asking him whether he knows anything about it

To which ruling of the Court the defendants etc, excepted

Mr Walker—If he has not looked into it I won't press it

A—I have not specially looked into it but I have a knowledge of the subject from reading

Q—What in your opinion doctor, as a physician can an adult human being—the amount of alcohol that he can take in 24 hours with safety? A—I would say that would vary with the individual

Q—Well the minimum? A—From three ounces say carried over a long period not at one dose at one time, but diluted and given through a period of 24 hours

THE COURT Q—Is that absolute alcohol or whisky? A—Absolute alcohol

Mr T J Scofield—Three or four ounces every 24 hours? A—About three ounces of absolute alcohol

Mr Walker Q—That is diluted? A—Diluted and given over a period of 24 hours in divided doses

Q—To what dilution would you say? A—Oh, half and half

Q—That would be equivalent would it doctor, to six ounces of whisky? A—About six ounces of whisky

Mr T J Scofield—Well six or eight

THE COURT—Depending on whether it was three or four ounces

The Witness—Yes Well I said three ounces was the minimum I did not quite understand the question when it was first given, if it was absolute alcohol I would say three ounces

The witness then defined inflammations of the uterus such as endometritis, and stated that when there are adhesions, the condition is not always surgical and that there are such cases that may be treated by medicine through the mouth The drugs mentioned are among those used for this purpose The witness stated that these drugs are those indicated to make childbirth easier Dr Grimmer stated that he would not give a girl treatment at the time of puberty unless she had symptoms If the hypothetic medicine was given to a girl at puberty who had no symptoms it would not, in his opinion, hurt her or create an alcoholic habit

CROSS EXAMINATION BY MR T J SCOFIELD

The witness stated that if a girl took the medicine at puberty without symptoms and continued it over a great length of time she might develop a proving and would then discontinue the remedy He stated that if she continued to take the medicine past that time, she might develop something that would be harmful to her Dr Grimmer testified that in the dosage *prescribed*, 48 drops, three or four times a day, he did not think the alcohol would hurt her or create an alcoholic habit, and he did not think it would not hurt her over a period of years She could take it right through a lifetime but he would not necessarily recommend it, nor would he recommend the medicine to a girl who had no symptoms because such are better off without any medicine

The witness says that he does not agree that all girls should take this medicine at puberty whether they have symptoms or not He considers that 50 per cent of girls need medicine at the period of puberty He stated that he arrives at this conclusion from the patients who come to his office, and that his statement is merely a rough sort of guess The witness stated that in a susceptible individual, the hypothetic medicine might produce symptoms if taken sufficiently long, say from two weeks to a month It might produce nervous symptoms mental symptoms functional disturbances of the menses, irregularities etc It would not produce gonorrhea, it might produce a slight degree of prolapse, it might produce catarrhal inflammation, *it* would *not* produce any sort of infectious inflammation He stated that practically all inflammations are infectious

He could not name any inflammation which was not infectious The witness considers that the use of this medicine *might* in some way lower the number of *inflammations* that might follow and might lower the vitality of these parts if taken through a long period of time in sufficiently large doses Dr Grimmer testified he does not agree with the statement in the Home Treatment Book for Women that all girls should take this medicinal solution all through the period of puberty and that it can do nothing but good He agrees with the part that it could do nothing but good He does not believe in self medication, in a few cases it might lower the resistance and might lay the patient open to infection He has always used carduus benedictus as a homeopathic tincture and viburnum prunifolium in the same way, and has never used them in combination The witness stated that he could not tell the percentage of alcohol, but believes that they are made up with 90 per cent of alcohol, although he has no absolute knowledge regarding the making of the tinctures The witness stated that he teaches only the symptomatology and the therapeutic action of the drugs, and not the pharmacology of the drugs

Dr Grimmer testified further that he has never used carduus benedictus until within the last three months and that he used carduus marianus until up to the time he testified in Chattanooga for the Chattanooga Medicine Company He took up the use of carduus benedictus as a result of the testimony he heard at Chattanooga The testimony he had reference to was that of Dr Ward and Dr Thornton

The witness stated that he has been in the employ of the Chattanooga Medicine Company since he testified in Chattanooga The reason he *came home from* Chattanooga and began to use carduus benedictus is because he was struck with the possibility of its use The witness says he has never made any provings of carduus benedictus There are provings of viburnum prunifolium He mentioned those of Hale and Higby

The witness stated that the viburnum prunifolium in the hypothetic medicine would not be *the homeopathic* tincture and carduus benedictus would not be the homeopathic tincture. The witness stated that his experience with the remedies was only with the homeopathic tincture

The witness stated that if it was assumed that the viburnum prunifolium in the homeopathic tincture was extracted with 90 per cent alcohol and that the viburnum prunifolium as extracted with 20 per cent of alcohol does not contain all the medicinal properties, he would have no opinion as to the value of the viburnum prunifolium as contained in the latter mixture The witness stated that if viburnum prunifolium is given to a girl who is not menstruating, it would be indicated for the sum total of her symptoms In other words, the physician would have to direct the giving

He stated that amenorrhea might be caused by a number of conditions Viburnum is indicated if the patient has all the other symptoms for this indication For this one must go to the provings He mentioned Hale and Clark

The witness stated that he does not know that Hale in 1882 stated that there were no provings of viburnum The witness stated that he obtained the provings from Hale's new book, titled "New Remedies" In this book Hale does not give the complete provings but only some symptoms Viburnum prunifolium is not a completely proved drug The witness stated that he has used carduus benedictus perhaps a half a dozen times since February and with success and as a result, he feels qualified to say that carduus benedictus is a therapeutic agent He gave it in the middle of March for a case of dysmenorrhea and also for a case of menstrual suppression He would not give the names of the patients He gave carduus benedictus to a girl with dysmenorrhea for a few days until the period had passed He gave her a drop of the tincture to nine drops of alcohol, which is the second dilution Of this he gave her five drops in a quarter of a glass of water and of this quarter of a glass of water he told her to take two teaspoonfuls every two hours until the pain was gone She took it for about two days He also gave it to her in April She was so well in May that he discontinued the medicine He would therefore consider that the medicine was indicated for that condition He did not make any examination of the girl, so that he does not know whether there were any sort of uterine laceration, flexions, salpingitis, endometritis or inflammations of the tubes and ovaries

In the case of suppression which he considers was caused by taking cold, he gave the same dosage He gave it in the month of March The girl who had dysmenorrhea he told to use the hot water bottle on the abdomen The one with the suppression he told to go to bed and keep warm The patient, however, remained "up and around" The witness stated that he thought the menses would probably have returned with no medicine whatever, but he believes that the medicine helped to bring them around He gave carduus benedictus in two cases of leukorrhea during the month of April One was a married woman, the other a girl 19 years old He did not try to make any diagnosis of the cause in either case He made no examination The married woman told him that she had never borne children He made an examination of her uterus a year or so ago, and he stated that there might be a vast difference in the position of the uterus after a year He gave the medicine simply on the symptomatology In the month of March, he gave carduus benedictus to one case with a general run down condition which he believed was due to overwork and poor nutrition He had made no effort to determine the cause of the condition except by talking to the patient He again refused to mention the names of the patients either privately or publicly and says that he has not mentioned them to the attorneys of the Chattanooga Medicine Company

The witness stated that he has been proving the medicine on two cases, but he has not advanced sufficiently to say anything about it One of them has been taking it for about a month and the other about a week One is a married woman and the other a girl 21 years old They had no symptoms of any kind He made no examination to determine whether there was anything wrong with them nor did he make any other kind of an examination He simply took the subjective history The medicines have produced no action whatever

Q —Let us assume a case, doctor Let us assume the case of a married woman who had a number of children, and that she had following her confinements, a prolapsus of her womb to the extent it was down near the external opening, also that it was turned wrong side up— *A* —Wrong side out?

Q —Wrong side up And that she could feel it in this abnormal position Assume that this condition had existed for approximately two years Have you an opinion as to whether, taking six bottles of the hypothetical medicine, or of the medicinal solution that Mr Walker called your attention to, in doses of a tablespoonful three times a day, could turn the misplaced womb back the other way and restore it to its normal position?

Mr Walker —That is objected to It is not cross-examination of anything

The Court —Is this a quotation taken from the book?

Mr Walker —No

Mr T J Scofield —No

Mr Walker —No Not at all He thinks he is construing some deposition of his own—testimony of his own

Mr T J Scofield —He has said that to a certain extent the medicine might tone up the ligaments

The Court —We have nothing in the record at the present time to base this hypothetical question on, that I recall

Mr T J Scofield —Yes, there is, absolutely

Mr Loesch —It was read yesterday

Mr T J Scofield —Read yesterday from one of their own depositions

Mr Walker —It is not cross-examination of anything

The Court —Did this appear in the depositions of yesterday?

Mr T J Scofield —Yes

Mr Walker —Something like it appeared in somebody's deposition, but it is not cross-examination

Mr T J Scofield —Well, we can test his knowledge

Mr Walker —No You can call him, when you get done, call him as your witness—he is an expert—and pay him like we pay him, for coming for us

The Court —They have a right to test the general knowledge of this professional man He may answer

To which ruling of the Court the plaintiff, etc , excepted

Mr T J Scofield *Q* —What do you say, doctor?

The Witness —Well, I would like the question again

Mr T J Scofield —Read the question

(Question read)

The Witness —I have an opinion, yes

Mr T J Scofield *Q* —What is that opinion? *A* —I don't believe it would I don't believe any medicine would That is an extreme case

REDIRECT EXAMINATION BY MR WALKER

The witness stated that beyond being employed as an expert, he was not in the employ of the Chattanooga Medicine Company The witness stated that it was not his experience that provers when they get symptoms go on taking the drug so as to keep them up, that in a case of a slow acting drug, it is necessary to keep up the practice for months even to a year

RECROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that the quantity of the medicine in a dose does not make any difference just so it is under the toxic dose

Adjournment was taken until 2 p m, May 23, 1916

May 23, 1916, Afternoon

TESTIMONY OF JOSEPH ALEXANDER DICKSON

The Court met pursuant to adjournment Mr Joseph Alexander Dickson was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Dickson testified that he lives in Heaton County, Tennessee He knows Rice Stanfill, who runs a store The witness denied that he had held any conversation with Rice Stanfill concerning Wine of Cardui, and stated that he had never asked Rice Stanfill for a drink of Wine of Cardui or of anything else intoxicating Mr Dickson stated that if he ever saw a bottle of Wine of Cardui he has no recollection of it, that he has known Dr W B Keaton for 20 years and that Dr Keaton had never seen him with a bottle of Wine of Cardui

Mr Scofield called attention to the fact that Dr Keaton made no statement whatever about Mr Dickson The Court ruled that this be stricken out

Cross-examination was waived

TESTIMONY OF NEWT G GAILBRAITH

Mr Newt G Gailbraith was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Gailbraith testified that he lives at Sunny Point, Chester County, Tennessee He knows Rice Stanfill The witness stated that he was not in Rice Stanfill s store in 1912, that he passed through Ragen Tennessee in which Stanfill s store was located, but had not stopped He had been there also in the fall of 1911 He stated that he had not taken a drink of Wine of Cardui in Stanfill s store nor anywhere else He does not know Dr W A Keaton personally, but he has known him by sight for three years The witness stated that he has never had a bottle of Wine of Cardui Mr Gailbraith stated that he drinks, that Tennessee has been dry for five or six years but that liquor may be obtained from boot-leggers It may be purchased in all kinds of bottles from nigger boot-leggers He does not know that he has ever see liquor in Wine of Cardui bottles Mr Gailbraith testified that he met Dr Heizer and that Dr Heizer wanted a statement from him to the effect that he had drank Wine of Cardui, that when speaking, Dr Heizer took a roll of bills from one pocket and transferred it to another The witness stated that he told Dr Heizer that he had never drunk Wine of Cardui Dr Heizer offered to pay him for his time, but the witness refused it

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he sometimes gets drunk, and that when he is drunk, he does not know what he is drinking if he drinks while he is in that condition He would not know whether it was Wine of Cardui or Hostetter s Bitters He goes on periodic sprees about every three or six months The witness stated that he buys whisky from boot leggers If he cannot get whisky, he might get Manola. He is not sure whether he ever drank Hostetter's Bitters The witness stated that he has been trading at Power s store at Ragen and that Dr Keaton might have seen him drunk there at the time

TESTIMONY OF L V M'MURRAY

Mr L V McMurray was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr McMurray testified that he lives in Sardis Tennessee He knows Rice Stanfill and considers his general reputation for truth and veracity in his community as bad He would not believe him on oath The witness is a farmer and runs a saw mill

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he has known Rice Stanfill for twelve or fifteen years He had some dealings with Mr Stanfill in 1912 Mr Stanfill is a merchant operating a general store There is one other general store in the community, that of Mr Powers There is a small settlement Mr Stanfill does a pretty good business

The witness stated that he heard some parties talk about Mr Stanfill in 1912 One of them was Mr J O, a farmer The witness stated that Mr J O stated that he had bought whisky from Mr Stanfill and stated that Stanfill had said he would swear to a d—— lie before he would turn a man up for selling whisky

The witness knows of no one else who has talked about Mr Stanfill The witness stated that he had been talking this matter over lately The first person to speak to him about it was Mr Hassel, a druggist in Sardis, who sells Wine of Cardui The witness came to Chicago with Mr Gailbraith The witness drinks beer and whisky The witness has seen Gailbraith drink. He expects to receive his expenses for coming to Chicago and a per diem, also, he does not know the meaning of the word "veracity"

TESTIMONY OF J W HASSEL

Mr J W Hassel was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Hassel testified that he resides in Sardis, Tennessee He is a druggist He was formerly postmaster and United States Commissioner in New Mexico The witness stated that he knows Mr M T Crouch He considers Mr Crouch s general reputation for truth and veracity in his community as bad and would not believe him on oath The witness stated that there is only one drug store in Sardis There are about five general stores, some of which carry a few drugs The witness has been carrying Wine of Cardui off and on for about 20 to 25 years The witness knows of no other store in that community where Wine of Cardui can be obtained except at Ragen, seven miles away or Scott's Hill Crouch is a farmer living near Sardis The witness stated that his books show that Crouch purchased only one bottle of Wine of Cardui in his store He possibly may have bought some and paid cash

The witness stated that there are about 500 people in the town that his store represents approximately 1,000 families He looks after his business personally When he is away he has a man in the store He stated that Mr Crouch usually pays cash for his Coca-Cola, but that is about all

Mr Crouch also paid for the goods he bought in the past week The witness stated that he came to Chicago at the request of Mr Richter, a representative of the Chattanooga Medicine Company, arrangements being made some two weeks ago

CROSS-EXAMINATION BY MR T J SCOFIELD

Mr Hassel stated that Mr Richter is not the man who sells him Wine of Cardui Mr Richter first came to his town two or three years ago and he has seen him several times since He also went 18 miles to Lexington to see Mr Richter Mr Hassel has sold Wine of Cardui off and on for 20 years

Q—Did you sell it while you were United States Commissioner? *A*—No I did not sell it while I was United States Commissioner—I sold it while I was U S Commissioner, yes

Q—Where was this? *A*—In New Mexico

Q—Were you running a drug store? *A*—A grocery store, and I handled Wine of Cardui

Q—And any other tonics? *A*—Well, I think that is the only line their s is about the only line I handled

Q—Didn t you sell Hostetter s Bitters down there? *A*—No sir

Q—Just selling Wine of Cardui and running the United States Government? *A*—I think that was all I sold

Q—What did you do as United States Commissioner take an acknowledgment sometimes? *A*—I accepted and filed claims and contests leaves of absence, and work of that kind pertinent to the land business there

Q—What did you do with them? *A*—I sent them to the U S Land Office

Q—You had sort of a filing desk down there? *A*—There was no great big amount of work no sir

Q—Then you don t mean to predicate any great amount on your being United States Commissioner, do you?

Mr Hough—That is objected to

The Witness—Well I do not no sir

THE COURT—Yes, I wondered why it was gone into at all by either side

Mr T J Scofield—They went into it and I wanted to go a little further in it that is all

Mr Hough—The statutes prescribes what the duties are of a United States Commissioner

Mr T J Scofield—We are very much obliged to you to get the information on that subject

Mr Hough—You are perfectly welcome

Mr Hassel stated that he is a licensed druggist he also fills prescriptions, and he has had license to sell alcoholic preparations since a year ago June

Q—What is the date of that license? *A*—Well I could not state the date of that license just now The license is dated back

Q—You had that license dated back some three years, didn t you? *A*—Yes sir—no sir

Q—Because you had been selling stuff there in violation of the law? *A*—No sir Now you hold on

Mr Fowler—Let him explain

The Witness—Since June was a year ago something like that I believe

Mr T J Scofield—Yes, you had it dated back three years didn t you? *A*—No sir

Q—You did not? *A*—No sir

Q—What did you mean a while ago when you said that you had it dated back? *A*—It was dated back from the time I filed the application for it if I understand it right

Q—Had you ever had a license before that? *A*—No sir

Q—Were you not required, since that was dry territory down there to have a permit or license for that sort of business? *A*—No sir not unless you handle it

Q—You did handle it, didn t you? *A*—No, sir, not prior to that

Q—When did you commence to handle it? *A*—About that time

Q—What is it you refer to now that you commenced to handle? *A*—Since June it was a year ago

Q—O handle what? *A*—Intoxicating liquors You understand it is—let us get this clear I had this license for this purpose in case that I should want to fill a prescription I don t do this now I do not handle it I did not like it after I had the license on account of the red tape there was to it, and I dropped it

Q—So you do not keep any liquors now? *A*—No, sir
Q—Of any kind? *A*—No, sir
Q—You don't fill any prescriptions? *A*—No, sir
Q—But you do sell Wine of Cardui? *A*—I do, yes, sir

The witness stated that he handles about $40 worth of Wine of Cardui and Black Draught a year That is at the wholesale price There are other stores in that neighborhood that handle Wine of Cardui, one about three miles away The witness stated that Mr Crouch is a farmer Mr Crouch has had an acount in his store and the balance is 90 cents He has never paid his account in full, but his bill at present amounts to 90 cents Mr Crouch has been trading with him for three years The witness was asked what he understands as 'general reputation" and he stated that there are some people who think that Mr Crouch would sell his vote The witness did not define what he understood by general reputation

REDIRECT EXAMINATION BY MR FOWLER

The witness stated that by general reputation, he meant by what he heard from people sitting around the stove in his store The witness stated that he occasionally fills prescriptions and for that reason, he obtained the government license The government license is only required where he would sell a quart to a pint of *spiritus frumenti*

RECROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that when he said that he sold $40 worth a year, he included Black Draught and Wine of Cardui

TESTIMONY OF A S MONTGOMERY

Mr A S Montgomery was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Montgomery testified that he lives in Sardis He has been cashier in the bank and previous to that was in the mercantile business He also carried a line of drugs in connection with his general store He sold Cardui at that time, there was also a drug store which carried Cardui He carried on a business with drugs some seven or eight years The witness testified that in going through his books, as soon as this case came up, he was unable to find that Mr Crouch had bought a bottle of Cardui from him He may have paid cash for it

Mr Montgomery testified that he met Dr Heizer on the stairway of the courthouse in Lexington Dr J T Keaton introduced him to Dr Heizer Dr Heizer came into the bank the next morning and cashed a draft for $175 which was endorsed by Dr John T Keaton The witness stated that Dr Heizer had said that he had taken quite a lot of money to get evidence in the South, and that Dr Heizer had said that he intended to spend several thousand dollars before returning home, perhaps as much as $10,000

CROSS-EXAMINATION BY MR T J SCOFIELD

Mr Montgomery stated that he met Mr Richter, Feb 1, 1916, in the bank Mr Richter introduced himself and entered into a conversation concerning the lawsuit The witness understands that Mr Richter represented the Chattanooga Medicine Company Mr Richter came again about three weeks ago The witness did not look about to see whether Mr Richter had money promiscuously in his pockets Mr Richter arranged with the witness to come to Chicago and asked him to testify to the fact that Dr Heizer had had a draft cashed and that Dr Heizer had some money The witness is here for that reason and expects to be paid for it

TESTIMONY OF J W KNIGHT

Mr Knight was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Knight testified that he resides in Inverness, Florida He has been chairman of the school board of the county and a member of the state legislature from his county Mr Knight testified that he had a daughter named Miss Mattie Clare Knight Mrs Knight has been dead since September, 1910 Miss Mattie Knight is also dead The witness knows H O Byrd of Trilby, Florida Dr Byrd saw Miss Mattie Knight in June, 1912 The witness furnished her with all her spending money prior to that time The witness does not know of her ever taking a drop of Wine of Cardui, prior to the time she was with Dr Byrd The witness testified that his daughter had a severe case of pleurisy When she met Dr Byrd, the doctor said she had a slight infection of one lung She had been getting better The witness stated that he did not hear his daughter tell Dr Byrd that she had taken any Wine of Cardui

The witness stated that Dr Byrd took her into the sanatorium and kept her until October In October, she was removed from the sanatorium and died a few days later His daughter had no female troubles that he knew of

Mr T J Scofield stated that there was nothing he cared to ask the witness as there was no contradiction

TESTIMONY OF MRS A O PIERCE

Mrs A O Pierce was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mrs A O Pierce testified that she lives in Tuca, Florida, and she had a daughter named Grace who is now dead This daughter was in charge of Dr Byrd, the second or third week in May, 1915 She remained in Dr Byrd's sanatorium five days Her daughter had been married before she saw Dr Byrd and had given birth to a child She had laceration She was separated from her husband, but had not had a divorce The witness testified that her daughter had not drunk Wine of Cardui at home and that she had never known of her taking Wine of Cardui The witness testified that Dr Byrd did not refuse to take her daughter into the sanatorium but was anxious for her to come into the sanatorium

CROSS-EXAMINATION BY MR T J SCOFIELD

Mrs Pierce stated that her daughter was in the sanatorium from Sunday to Thursday She herself was not in the sanatorium, so she does not know anything about what her daughter told Dr Byrd during that time

DEPOSITIONS

Depositions were read and an adjournment was taken until May 24, 1916, at 10 30 a m

May 24, 1916, Morning

TESTIMONY OF DR MALCOLM L HARRIS

The Court met pursuant to adjournment Dr M L Harris was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR HOUGH

Dr M L Harris testified that he is a physician practicing in Chicago He identified a prescription as his own, he also identified a letter to another patient as his own He has treated diseases of women He stated that he used viburnum prunifolium early in his experience, then stopped using it and tried it again recently He had not figured out exactly how much alcohol there was in each dose in the prescription he identified When asked whether he had ever prescribed by mail without an examination he stated that under certain conditions he had These conditions are if he knows the patient and knows the trouble, or if there is some emergency about the case which makes it desirable that the patient has advice pending his coming in for examination

The cross-examination of Dr Harris was deferred (see p 307)

TESTIMONY OF DR ARTHUR HORACE GORDON

Dr Arthur Horace Gordon was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR HOUGH

Dr Gordon testified that he is a physician practicing in Chicago, where he has resided since 1884 He graduated from the Hahnemann Homeopathic Medical College in 1887, and has been professor of the theory and practice of medicine in this school He conducts a clinic and is state medical examiner for a large life insurance company Dr Gordon testified that he is a member of the Chicago Homeopathic Medical Society, the Illinois Homeopathic Medical Society and the American Institute of Homeopathy He was a delegate to the International Society of Homeopaths in 1911, and has been chairman of the bureau of clinical medicine of the Illinois Homeopathic Society and of the bureau of materia medica and general therapeutics of the national society He has been doing postgraduate work every year for the past fifteen years

The witness defined a homeopathic physician, the rule of similars etc. The witness stated that he knows viburnum prunifolium, carduus benedictus, viburnum opulus, and carduus marianus He stated that carduus marianus and carduus benedictus are of the same family and their provings show that they are very nearly related in their action on the human organism, the same pertains with viburnum opulus and viburnum prunifolium The witness described the provings He stated that they are very carefully done He stated that carduus benedictus and viburnum prunifolium are indicated for amenorrhea, dysmenorrhea, metrorrhagia, vaginitis, menorrhagia cystitis, endometritis, metritis, prolapsus, threatened abortion sterility and leukorrhea He has used the drugs himself with excellent results The homeopathic school aims to use the smallest dose possible that will make a cure He described tincture, lower and higher potencies, and stated that alcohol is used as a menstruum to dilute and keep remedies in good condition, and also for its extractive purposes He stated that in their work the homeopaths consider two ounces of alcohol about the limit that a human body can oxidize in 24 hours He thinks that two ounces are about 480 drops

Mr Hough stated, "do you mean to an ounce?" The witness answered, "To the ounce" The witness stated that it is not strictly in accordance with the homeopathic teachings to combine drugs but as a matter of practice, homeopathic physicians often combine them This is a personal matter with the physician The witness stated that strictly homeopathic teachings do not recognize the synergistic action of drugs and do not advise mixtures They sometimes follow up one drug with another and call this complementary action

There was described to the witness the hypothetic medicine containing 60 grains of carduus benedictus or the extractives from it and 6 grains of viburnum prunifolium to the fluidounce, in a menstruum of 20 per cent of alcohol, in a dosage of a tablespoonful, either two or three or four times a day He considered that such a mixture might be of service, although he has personally never used it He would not consider the alcohol as having a deleterious effect on a girl at puberty nor would it, he believed, tend to excite her passions or create a habit The witness stated that he did not believe that there would be any danger in administering such a medicine to a woman at the menopause Such medicines are indicated during that period He thinks it would be all right for a woman who had disturbing symptoms to take this during the menopause, and that it would be all right for a young girl who had disturbing symptoms at puberty to take it He considered also that carduus benedictus and viburnum prunifolium are indicated during pregnancy to make childbirth easier and for any disturbing symptoms

The witness stated that in homeopathic preparations, of these drugs from 50 to 60 per cent of alcohol is used These drugs were originally used as a tea or an infusion by extraction of the medicinal properties by hot water He does not know the exact percentage of alcohol required to extract the virtues of the drugs The witness stated in what way these drugs would benefit cases of sterility, and in what way they could benefit infection, namely, by building up the defensive powers of the body Uterine displacements would also be benefited in this way In the same way, he stated they would benefit gonorrheal infections The witness stated that both of these drugs are in the homeopathic pharmacopeia which indicates that they have been proved and accepted by the committee on drug provings of the American Institute of Homeopathy

The witness did not think that this medicine would mask a cancer

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that in a large majority of cases, cancer progresses to fatality He has seen cases apparently cured by arsenic given homeopathically in one case Cancer of the stomach was diagnosed from the symptoms of the patient with a cure following the giving of arsenic There were no exploratory incisions The witness stated that cases of syphilis are not the same as cancer, as the cachexia of cancer is peculiar to itself He would not attempt to diagnose cancer of the stomach by reason of the cachexia only The witness mentioned emaciation and pain in the pyloric region of the stomach as symptoms of cancer He stated that pain might also mean gallstones, or an ulcer of the stomach and that there are many things which might produce these symptoms but the pain of cancer is not the same in his experience He knows the pain only as it is described by a patient

Another symptom was the coffee-ground vomiting, which he thinks is peculiar to cancer He does not think that this might come from any condition of liberating blood in the stomach He does not think it would come from an ulcer

Q—What produces the coffee ground appearance? *A*—Disintegration of the blood

Q—It is the action of the gastric juice, isn't it? *A*—I do not think that I am a sufficient specialist in stomach diseases to absolutely be sure of that but that is my impression that it is the result of the diseased condition there from—of the cancerous degeneration as well as the action of the gastric juice

Q—You diagnosed this condition, didn t you? *A*—I did with the help of the laboratory

Q—Oh then you did not depend upon yourself in diagnosing the condition? *A*—Not entirely

Q—You say you did with the help of the laboratory What do you mean by that? *A*—They made an examination of the contents of the stomach.

Q—Did they find any cancer cells? *A*—As I remember the examination they did not

Q—They did not? What did they find? *A*—They found lactic acid

Q—Found what? *A*—Lactic acid

Q—Why you have that in the stomach when you drink milk don t you? *A*—It depends on whether the milk is sweet or sour

Q—Whether it is sweet or whether it is sour, don t you have lactic acid in the stomach after you drink milk sweet or sour? *A*—I do not think so My opinion is—

Q—Do you know? *A*—My opinion is that we do not

Q—I say do you know whether it is or not, whether you would or not? *A*—I am not a laboratory man Mr Scofield I rely for my information on those points on the laboratory men

Q—Doctor lactic acid is the acid of milk isn t it and is always in it whether it is sour or whether it is sweet isn t that right in the process of digestion? *A*—I do not think so Mr Scofield I do not think so I am not positive though I am not as I have said before—I am not competent to tell you

Q—You used the word lactic acid' Tell us what lactic acid is as you find it in the stomach under such conditions and why do you attach so much importance to it? *A*—Because if you give a test meal so far as my knowledge of those test meals go, you do not find lactic acid in a healthy stomach

Mr Hough—I did not want to make an objection earlier but it does not seem to me that this is directly on the point I thought maybe Mr Scofield was interested and wanted to find out just on account of curiosity

The Court—Well, it is testing the general knowledge of the witness

Mr Hough—Yes but at the same time it was not responsive to any question I asked I simply asked whether this medicine would mask the symptoms of cancer

The Court—Yes

Mr T J Scofield *Q*—What else did you depend upon in diagnosing the cancer of the stomach at that time than the lactic acid and the coffee-ground condition of the blood? *A*—Pain

Q—What sort of pain was it? *A*—Sharp

Q—You diagnosed the condition on that? *A*—Not on the pain alone from the symptoms and physical signs, as I before stated

Q—There were three things the lactic acid coffee ground color of the vomited matter and the pain There are three things? *A*—And the cachexia

Q—What? *A*—The cachexia and emaciation

Q—That is the appearance? *A*—Yes sir and the physical signs

Q—Either one of those things that you have enumerated and upon which you say you diagnosed this condition may be produced by other conditions might they not? *A*—I don t believe that those symptoms complex could be produced by other conditions and we have not gotten yet to the physical signs

Q—Now then doctor you said a while ago that cancer might be produced by ulcer ulcerous conditions of ulcer of the stomach? *A*—It usually precedes cancer

Q—Can't all that condition that you have just referred to, that is, all those symptoms that you have spoken of, result from an ulcerous condition of the stomach, without cancer? *A*—I don't think so I don't think you will get that symptom complex

Q—Have you ever had any other experience in considering the question than in that one case where you have cured cancer with medicine? *A*—Yes, sir

Q—How many different *times*? *A*—Well, I could not state in the length of time it runs over, so many years, perhaps 28 or 29 years as mine has, immediately, without thought, how many times, but I have seen and treated a great many cases of cancer of the stomach

Q—You have cured a great many cases of cancer, haven't you?

Mr Walker—He did not say that

Mr T J Scofield *Q*—Have you or not? *A*—I have cured two that I am fairly positive of One *in* my own private practice, and this one that I am positive of, as far as I can be positive of anything

Q—How is that? *A*—I am as positive of it as far as I can be positive of anything

Q—Did you use arsenic in both cases? *A*—Yes, sir

Q—In what sort of dilution? *A*—I used the 6 X *potency*

Q—You used that in a low dilution? *A*—No, sir, that is considered a high potency

Q—What is 6 X? *A*—Well, 6 X is the tincture diluted six times

Q—Well now, explain that to us so that we can understand what you *mean* by it How *much* arsenic was *there*? How much did you take first? *A*—I gave her three tablets

Q—What? *A*—Three tablets of arsenic, 6 X

Q—Three tablets what? *A*—Six X Do you wish me to figure it out?

Q—First, what is 1 X? *A*—One X is one tenth of a grain

Q—Now, what would 2 X be? *A*—*One one hundredth of a grain*

Q—What would 3 X be? *A*—One one thousandth

Q—What would 4 X be? *A*—One ten thousandth

Q—What would 6 X be? *A*—One millionth

Q—*That* is, one millionth of a grain of arsenic? *A*—Yes, sir

Q—And that is the way you treated cancer of the *stomach*, is it? *A*—Yes, sir, and I have full belief in its curative power

Q—With arsenic That arsenic was just the same as any other arsenic? *A*—Yes, sir

Q—So that you used in the treatment of that case, one millionth of a grain per dose? *A*—Yes, sir

Q—How many doses did you give? *A*—Well, it was more than one millionth of a grain because I gave three tablets at a time It would reduce just the same

Q—Then you had three millionths of a grain? *A*—Yes, sir

Q—At a dose? *A*—Yes, sir

Q—You did not think there was any danger of poisoning the man, did you, doctor? *A*—Not at all, although I have seen—

Q—How many—

Mr Hough—Let him finish

The Witness—I have seen marked aggravations

Mr T J Scofield—I am speaking of this time

The Witness—(Continuing) From those doses

Q—I am speaking of this man, and asking you whether you thought there was any danger of poisoning him? *A*—No, I did not

Q—Now, you sometimes go beyond in your work 6 X don't you? *A*—*We often use the thirtieth, yes, sir*

Q—What would that represent, could you estimate it? *A*—I would have to figure it out, thirty ciphers

Q—It would take a row of figures pretty near across this room—the fraction of a grain? *A*—Not so far as all that

Q—How do you progress, by hundredths or thousandths or what? *A*—By tenths

Q—Yes, but past three, don't you go by hundredths? *A*—Oh, you mean in the amount of medicine?

Q—Yes? *A*—Yes, sir

Q—After you pass six, how do you go? *A*—Well, figure it out

Q—I am asking you to figure it out You are a doctor, *I am not*

A—It is mathematics

Q—You are a physician, and you know what you give, don't you? Suppose it was *10* X, how much are you giving your patient, what part of a grain? *A*—Well, we figured the 6 X up to a millionth you can carry it out by adding ciphers, you add one cipher *for each* one

Q—How about 10 X? *A*—I have never estimated it

Q—Have you ever given it? *A*—Yes, sir

Q—Given it up as high as 30 X? *A*—Yes, I have given it up as high as 200 X

Q—Up as high as *200* X? *A*—Yes, sir

Q—But you don't know how much there would be in it? *A*—I have never figured it out, but I have full confidence in its curative power

Q—Isn't 6 X one billionth of a grain, instead of a millionth? *A*—It may be, I did not figure it

Q—So that you don't know how much you are giving? *A*—We know what potency we are giving, and what we expect from it

Q—Now, getting back to the cancer question You have never cured it with anything else than that sort of a dosage of arsenic? *A*—In each case that I treated, that was the main prescription I did use other medicines intercurrently for other *conditions*, but that was the main treatment It revolved around that treatment, small doses of arsenic

Q—The other medicines given were for other conditions? *A*—Yes, sir

Q—You did not use viburnum *prunifolium*? *A*—No, sir

Q—You did not use carduus benedictus? *A*—No, sir

Q—Nor did you use a combination of the two in a *20* per cent alcoholic menstruum, did you? *A*—No, sir

Mr Walker—In cancer of the stomach?

Mr T J Scofield—Well, suppose it had been cancer of the womb, would you have used the same treatment that you did? *A*—If it were indicated

Q—When you say *if* it were indicated, what do you mean by that, doctor? *A*—I mean that if the drug—if the picture of the disease fits the picture of the remedy

Q—Now, let us take that—you have used that term "if it were indicated," practically every time you have answered Mr Hough's *questions* *Now, let us commence with* one of the first things *that* you talked about, which was *amenorrhea*, and in which you said that this medicine, such as he described to you (which simulates Wine of Cardui as I understand it), would be good if it was indicated Is that what you said? *A*—Yes, sir

Q—How *often* do you *think* you *would find* it indicated in amenorrhea? *A*—That is a question that would be impossible to answer

Q—Yes Now, let us *understand* what you mean by 'it would be a good medicine, if indicated" How would you determine the question as to whether it was indicated or not? *A*—Well, we have a certain list of remedies that we *think of*, when a certain condition appears in a diseased subject We have those in our mind They have certain given, noted symptoms, which are strong, and frequently occur to us Then we take the case, and we take our books from our library shelves (just *as you* do, I suppose, when you have a case that needs looking up), and we fit the remedy to the provings and to the symptoms as they are *given in* those reference books

Q—All right Now then, doctor, in that case, the case of amenorrhea, you go to the books, and you hunt up the list of symptoms that are indicated in that condition, is that right? *A*—Yes, sir

Q—There *are* a *lot* of different drugs which you give in your *school* that are indicated, as you say, for these different sets of symptoms? *A*—Yes, sir

Q—There might be 50 or 60 or a hundred *different* drugs that might be given under these circumstances, depending upon what the symptoms were, isn't that true? *A*—*Yes, sir*

Q—All of them for *amenorrhea*, *isn't that true*? *A*—*Yes, sir*

Q—So that, in determining what you will give for amenorrhea, you would not give viburnum prunifolium or carduus benedictus in *all cases of amenorrhea*, would you? *A*—No, sir

Q—But you would *try to see first* what the particular symptom was, or set of symptoms, and having *ascertained* that, you would then go to your medicines, and your provings, for the purpose of saying what particular medicine or medicines were indicated for those particular purposes? *A*—Yes, sir

Q—Now, that being true, it is not very *often*, *is it*, *doctor*, that in the treatment of amenorrhea you use the same medicine? *A*—Yes, because—we do often use the same medicines

Q—Then you often use it You don't always use the same medicines? *A*—No, sir

Q—There are—frequently you find a set of symptoms that induces you or induces within you the belief that the proper treatment is a *certain medicine*? *A*—Yes, sir

Q—And then you find for amenorrhea certain other symptoms that were indicated, that induced you to believe that another medicine is the *medicine* to use? *A*—Yes, sir

Q—And then you find a set of symptoms that will, in accordance with your school, require a different medicine? *A*—Yes, sir

Q—And so on through, until you take the gamut on some fifty or sixty different medicines that you give, depending upon what the symptoms were, isn't that right, doctor? *A*—Hardly as many as that

Q—Well, a great number? *A*—A number

Q—A great number—a number? *A*—Yes, sir

Q—In other words, now, if I understand you, doctor, you *don't* want to be understood here as saying that any one remedy or combi*nation* of remedies responds to the symptoms of amenorrhea? *A*—No, sir

The witness then stated that in treating amenorrhea, he takes into consideration the causes and mentioned the various causes of amenorrhea He stated that the treatment would vary with each of the cases and be determined on the symptoms He would not give the same medicine each time to a woman with amenorrhea, some medicines are more frequently indicated than others He would not undertake to treat all cases with certain drugs because they are indicated oftener than the others It was necessary in treating diseases, he believed, to diagnose the *condition*, and it is best to have a physician for this purpose, in most cases an examination is necessary, in some cases the symptoms are sufficient so that an examination is not necessary for a treatment If new symptoms *manifest* themselves, it would be necessary to change the medicine and he would change it Such new symptoms frequently occur in diseases The witness stated that in answering Mr Hough, when he stated that the hypothetic medicine might be good for various conditions, when it was indicated, he meant to say that if it met the requirements of certain symptoms, he would give it and if he did not meet the symptoms, he did not give it There was described to the witness a hypothetic case of a married woman who had suffered two miscarriages, after which she became pregnant and gave birth to twins Following the delivery of the twins, there was a uterine prolapse so marked that the womb might be felt by the patient just inside of the opening.

He stated that the hypothetic medicine would not cause the womb to return to its normal position. He stated that he could not tell whether the woman would be able to feel the womb going back to this normal position because he is not a woman and has no idea as to how a woman would feel in such a condition.

The witness then stated that one method of proving medicine was by trying it on a patient with symptoms, and in this way drugs might be proved for use in threatened miscarriage. The witness did not remember of having heard that a woman may go to bed threatened with a miscarriage and so recover. In using viburnum prunifolium, he uses the homeopathic tincture or the fluidextract. The testimony given referred to the use of this preparation, the same thing applied to his use of carduus benedictus. There was described to the witness the hypothetic case of a tumor developing in a woman on the left side of the abdomen just below the 'short ribs.' It was hard in the center and somewhat softer on the outer edges. It increased in size for six months until it required both of the woman's hands to cover it. It could plainly be seen through the clothing of the woman when she was dressed. In addition to this the woman suffered from headaches and pains in the back, her menstrual periods were not regular, and she had menorrhagia.

The witness stated that the hypothetic medicine might be indicated in such a condition. He was asked to assume that the woman began taking this medicine, in tablespoonful doses three times a day. It was his opinion that it was possible for the tumor to begin becoming less in size after using this medicine two or three days and that after using three bottles of this medicine over a few months, the tumor would grow so small that it could not be felt, and that after using four bottles, six months from the time it was begun, the tumor would entirely disappear.

The witness reiterated that such a case was possible.

REDIRECT EXAMINATION BY MR. HOUGH

The case was again described to the witness by Mr. Hough. The witness stated that very likely the woman was mistaken in her diagnosis. He would not say that she was mistaken as to her symptoms. The witness stated that he has known cases of slight prolapse, where after taking medicine the womb has gone back into place. The witness knows of drugs used by allopaths in homeopathic doses. He mentioned tuberculin which he savs is given in infinitesimal doses. He mentioned adrenalin chlorid as of the same class.

RECROSS-EXAMINATION BY MR. T. J. SCOFIELD

The witness testified that he considers tuberculin a medicinal substance. He stated that it was a poison, consisting of the germs of tuberculosis ground up. Adrenalin is an exceedingly violent poison. He did not know whether tuberculin was as dangerous as strychnin. He would not consider a thirtieth of a grain as a safe dose.

REDIRECT EXAMINATION BY MR. HOUGH

The witness stated that arsenic is a very powerful poison. He would give an infinitesimal dose about once in three hours.

TESTIMONY OF DR. MALCOLM L. HARRIS

Dr. Malcolm L. Harris resumed the stand for the plaintiff.

CROSS-EXAMINATION BY MR. T. J. SCOFIELD

Dr. M. L. Harris stated that he discontinued viburnum because he did not get any favorable results. He used it again comparatively recently, to see if there had been any change, and see if his former opinion of it was still correct, and he found that it was. He did not get any favorable effects from viburnum prunifolium.

REDIRECT EXAMINATION BY MR. HOUGH

Mr. Hough asked the witness how he knew the effects of the prescription on the patient. The witness stated that the prescription had nothing whatever to do with the letter which had been identified, and requested Mr. Hough to identify the patient for whom the prescription was given; this was not done.

Adjournment was taken until 2 o'clock of the same day.

(To be continued)

Correspondence

The Index Catalogue and Index Medicus

To the Editor:—In The Journal, July 1, p. 39, your editorial writer indulges in certain comments on the *Index Catalogue* and the *Index Medicus* which seem to be conceived in a spirit *propter invidiam,* inasmuch as these publications seem to be regarded as commercial competitors of the *Quarterly Cumulative Index* issued by the Association. Without wishing to criticize this publication, which undoubtedly has its proper use and value, it should be obvious that the *Index Catalogue* and *Index Medicus* do not and have never entered into competition with any publications or bibliographic compilations whatever, and it seems strange that any new publication of the kind specified should be pitted against them, as the *Index Catalogue* is a government publication and the *Index Medicus* is published by a scientific institution.

The *Index Catalogue* and the *Index Medicus* were originally designed as complete bibliographies of the literature of medicine through the periods of time covered by them, and, as such, they have a definite and positive value for the workers of the future as well as for those of the present. There are many bibliographies of the different branches of medicine which are apparently not known to the writer of the editorial, but the great drawback in all is that they are confined mainly, sometimes exclusively, to the language of the countries in which they are issued, which is not the case with the *Index Catalogue* and the *Index Medicus*. That the latter indexes may, in the words of your editorial, 'leave much to be desired" is also the case with any scientific publication, except perhaps a table of logarithms. In this sense even such classical bibliographies as those of Laehr on neurology or Abderhalden on alcoholism left something to be desired a few years after their respective dates of publication. In regard to the statement that the *Index Catalogue* is "out of date" and that the *Index Medicus* is 'never up to date" I beg to say that such criticisms have never, to my knowledge, been advanced by any reasonable person using them extensively. The slow rate of production of recent numbers of the *Index Medicus* is due to the fact that since the outbreak of the European war, the falling off in amount of medical literature has been so pronounced that it has been actually necessary to wait for the accumulation of the proper amount of material before sending copy to the printers, but the monthly numbers contain all that has accumulated up to the time of publication. Thus, the *British Medical Journal*, which contained 1,652 pages in 1913, contained only 1,124 in the latter half of 1914, 1,104 pages during the first half of 1915, and probably less than 1,000 pages during the first half of 1916. The medical literature of France has fallen off to an even larger degree, that of Belgium is practically extinct, little Russian and no German literature whatever is now coming into this country at present, and with the exception of Italy, the output of the other combatant countries is fitful and irregular. As soon as the pressure of the war is removed and the backwash of literature becomes obtainable, it is proposed to print the accumulation in bulk and as rapidly as possible in the *Index Medicus*. The necessity of keeping the present numbers of the periodical up to a certain standard of size is therefore obvious. The annual indexes of the *Index Medicus* for 1912, 1913 and 1914 were issued early in July, 1913, 1914 and 1915, respectively, and that for 1915 will appear in a few days.

F. H. Garrison, M.D.,
Surgeon-General's Office, Washington, D. C.

[Comment.—If our editorial carried the impression that the *Quarterly Cumulative Index* is to compete with the *Index Catalogue* and the *Index Medicus*, the language must have been obscure. On the contrary, our editorial pointed out the necessity for an index supplementary to the two mentioned—one that would be of practical value to the every-day worker in literature. The two indexes issued from the Surgeon-General's office are inclusive and exhaustive; the *Quarterly Cumulative Index*, it is definitely stated, will not be either. It will contain an index of the cream of the medical literature of the world, up to date and of easy reference, but will in no sense be comparable with the *Index Medicus* or the *Index Catalogue*.—Ed.]

Health Conditions in British Somaliland

To the Editor —Through the courtesy of the medical officer of the Somaliland Protectorate, I have come in possession of the following interesting information regarding a section of Africa concerning which the available information is far from satisfactory and complete

"Leprosy is of extreme rarity in British Somaliland, though the Somalis seem to have some traditional knowledge of it I fancy any such patient would be killed for purposes of public safety anywhere in the interior In this connection it is of interest that although sea fish of many varieties are plentiful all along the coast, no Somalis will eat them, though the Arabs, Indians and Europeans do There is no reason for this beyond custom, which is of a strength unknown among western nations

"Malignant diseases, cancer and sarcoma of all varieties are practically unknown In the course of twelve years I have only had one case and that proved to be a transitional form of growth occurring at the pylorus and junction with the duodenum Rodent ulcer exists but is very rare also

"I am completely at a loss as to why there should be no breast cancers when the skin must so frequently be subject to excoriation from sand But as regards intestinal new growths, it is noteworthy that this collection of tribes (1) never consistently overeat, (2) never make a daily practice of eating meat, (3) never eat pork or eggs under any conditions whatever, including lard or eggs if contained in cakes of any kind, and (4) seldom, if ever, eat any vegetables Of the things they do and do not eat, the following are the most noticeable

"(*a*) They live by preference on camel, goat and cow's milk, occasionally killing and eating these animals

"(*b*) Luxuries are tea (no coffee is drunk nearer than Abyssinia, where the husk only is used, the bean being considered too heating, dates, which are imported, as is tea, and which are invariably eaten and swallowed with the datestones—why, it is difficult to say except that it is custom Human droppings almost invariably contain about a dozen of these, sugar is a much valued food, as is honey, tobacco is not smoked or chewed by more than perhaps one in 300 Somalis and shows no signs of coming into favor, though extensively used by the Arabs Any form of stimulant except tea—that is, coffee, tobacco, alcohol, kat (a shrub of mildly astringent properties with no alkaloids contained in it) is never taken The result as regards surgical operations on such people, using chloroform almost invariably, as the anesthetic, is most satisfactory; none of the troubles frequently met with elsewhere ever occur"

The reports of Dr A J M Paget, senior medical officer, have thrown much light on obscure medical questions regarding the primitive population of this important region, and the preceding statement may therefore be accepted with confidence as being both conservative and conclusive

The general health conditions affecting the European population appear to be fairly good The country is more or less liable to native uprisings, and a voluminous correspondence on the subject has been published by the British government The heat in the coast belt is excessive, the country being unusually dry and arid The fine sand which is held in the air during the summer months precludes flies or mosquitoes According to Dr Paget, "Malaria is found to be chiefly propagated through the water vessels standing in the houses, this being difficult to control in any way without the aid of an inspector or staff of any kind A practically complete clearance of all mosquitoes occurs in the summer, owing to the sand storms" The sanitary situation is described by the doctor in the statement that "the general native attitude is that it is fashionable to show a complete disregard of any form of European education, teaching or advice"

Frederick L Hoffman, Newark, N J
Statistician, the Prudential Insurance Company of America

Alcoholism at Altitudes —There is another very striking fact in mountain climbing worthy of note, namely, that persons who consume much alcohol are much more susceptible than others to mountain sickness This is akin to the fact noticed by us that alcoholics are also very susceptible to poisoning by carbon monoxide —Glaister

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

SKIN MANIFESTATIONS IN PELLAGRA

To the Editor —1 Are skin diseases in general, or the skin manifestations in pellagra in particular, affected favorably or unfavorably by the deficiency of atmospheric pressure, at an altitude of 7,000 feet in the Rockies?

2 The hair fell out *only* on the extremities, some four years ago, in a case of pellagra with no specific taint Is such loss not unusual in pellagra? Will the hair return when the skin manifestations disappear?

3 Are the skin or the psychic manifestations the last symptoms o disappear in pellagra? Which and, if neither, what?

4 Will the change in the viscosity of the blood, at the altitude mentioned play a part for or against a pellagrin?

5 Is a neurotic, who is a pellagrin, more apt to have one of the neurotic skin diseases as a complication, than otherwise?

6 Will any one, and especially a pellagrin, be more disposed to have any one of the circulatory diseases than otherwise, at the foregoing altitude If so, which?

James R Anthony, M D, *Indianapolis*

Answer —1 Neither skin diseases in general nor the skin manifestations of pellagra in particular appear to be unfavorably affected by the deficiency of atmospheric pressure at an altitude of 7,000 feet With regard to pellagra, no evident relation has been shown between this disease and the altitude It is common in the Tyrolean Alps and also in lower Egypt The latter country is, in part, below the level of the sea and rises only at the rate of 13 inches to the mile The character of the disease and its manifestations are the same at the two levels While authorities differ as to the modus operandi, they are all agreed that the colder climate of a high altitude is favorable for the pellagrin Pellagra is not a winter disease A pellagrin going to the Rockies should be specially cautioned against the risk of sunburn

2 Loss of hair over limited areas, especially symmetrical areas, is known in pellagra If the skin lesions have not proceeded to the ulceration stage, the hair will usually grow again

3 There is no rule as to which disappear first in pellagra, the psychic disturbances or the skin lesions, but when the former are advanced to the degree which is seen in asylums for the insane, it is almost invariably the case that during cure or partial cure the skin lesions clear up first On the other hand, slight recurrences of the erythema only are far from uncommon

4 There is no reason to suppose that the effect of altitude on the viscosity of the blood would be such as to affect the pellagrin one way or the other

5 Pellagra skin manifestations seem to be quite *sui generis*, therefore there is no reason to suppose that a neurotic who is a pellagrin will be especially liable to neurotic skin diseases It should be remembered that every pellagrin is subject to nervous disease symptoms

6 A pellagrin, as such, would not be liable to circulatory diseases on account of the altitude With regard to the more general question, persons with arteriosclerosis and with uncompensated heart disease should not go to high altitudes, those with fully compensated cardiac diseases may visit the mountains, but should be cautioned against taking much exercise, especially at first When the cardiac trouble is due to general poor health, a visit to the mountains, unless contraindicated for other reasons, would be generally beneficial

IS DOUBLE VASECTOMY JUSTIFIABLE?

To the Editor —1 Will you kindly state the effect of double vasectomy on the sexual life of man? 2 Would it be considered 'good form' to sterilize a poor man who has a large family and who realizes that he has more children now than he can educate? 3 Would a man be protected from the law if he secured the request of such a person in writing before performing this operation?

R B Gaston, M D, *Lebanon, Tenn*

Answer —1 Double vasectomy, it is generally believed, has no effect on sexual desire or power It only renders the individual sterile

2 A surgeon doing a double vasectomy with poverty as the only indication would lay himself open to severe criticism, to say the least

3 There is no specific law that would make a licensed surgeon liable for performing this operation with the full consent of the patient, if the operator considered it justifiable, but the mere written consent on the part of the patient would not prevent suit being brought against the surgeon See Queries and Minor Notes as follows

Effect of Cutting the Vas Deferens THE JOURNAL, Dec 13 1913, p 2179

Vasectomy Technic and Effect on Sexual Intercourse, March 8, 1913, p 769

HEXAMETHYLENAMIN IN ANTERIOR POLIOMYELITIS

To the Editor —During an outbreak of poliomyelitis some years ago Flexner of the Rockefeller Institute recommended hexamethylenamin as a preventive, as he found that monkeys inoculated with poliomyelitis on being treated with this drug did not suffer to the same extent as if they had had no hexamethylenamin and sometimes escaped an attack entirely Will you be good enough to let me know what the present status of the use of this drug as a preventive may be?

H W HILL M D London, Canada

ANSWER.—It has been shown that hexamethylenamin has no germicidal activities except in an acid medium Therefore it is of special value only in infections of the pelvis of the kidney ureters bladder and urethra when the urine is acid It cannot be expected to exert germicidal activity in the spinal fluid, which is alkaline

NINE USEFUL DRUGS

To the Editor —In my grip which I carry with me I have a case of nine medicine bottles Would you make a suggestion as to the most useful drugs to carry with me?

MORRELL SIMPSON M D, —— Ind

ANSWER.—We submit this communication to our readers If the replies are adequate in quality and quantity, an analysis will be published later

Medical Education and State Boards of Registration

Hawaii Report

Mr Kirk B Porter, secretary of the Hawaiian Territorial Board of Health reports that eight candidates were licensed recently in Hawaii The following colleges were represented

PASSED

College	Year Grad	Total No Licensed
University of Maryland	(1899)	1
Washington University	(1915)	1
Jefferson Medical College	(1910)	1
University of Pennsylvania	(1897) (1909) (1915)	3
Woman s Medical College of Pennsylvania	(1909)	1
Tohoku Imperial University	(1901)	1

Nevada May Report

Dr Simeon L Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, May 1-3, 1916 The total number of subjects examined in was 13, total number of questions asked, 100, percentage required to pass 75 The total number of candidates examined was 5, of whom 4 passed and 1 failed Eight candidates were licensed through reciprocity The following colleges were represented

PASSED

College	Year Grad	Per Cent
Harvard University	(1901)	88 9
Cornell University	(1910)	95 9
New York University Medical College	(1898)	91 6
Tokyo Charity Hospital Special Medical School	(1911)	81 9

FAILED

College	Year Grad	Per Cent
College of Physicians and Surgeons Little Rock	(1909)	41 6

LICENSED THROUGH RECIPROCITY

College	Year Grad	Reciprocity with
Georgetown University	(1891)	Penna
College of Physicians and Surgeons Chicago	(1897)	Wisconsin
Jenner Medical College	(1901) Illinois (1904)	Indiana
Rush Medical College	(1895)	Nebraska
Detroit College of Medicine	(1901)	Illinois
John A Creighton Medical College	(1896)	Nebraska
Montreal School of Medicine and Surgery	(1895)	Indiana

Medicolegal

Insufficient Evidence of Malpractice — Requirements

(Idolay v Miller et al (Ind), 111 N E R 313)

The Appellate Court of Indiana, Division No 2, affirms a judgment in favor of the defendants, who were charged with malpractice in the treatment of a compound fracture of the bones of the plaintiff's right forearm The court says that, to its mind the evidence showed nothing more than the acts of the defendants while engaged in setting the injured bones as these were observed by the plaintiff and his wife, the nature of the treatment by Dr Miller thereafter as they observed it the statement of the defendants as to their belief that the arm would be restored to its usefulness and the fact that the arm was not straight when the splints were removed There was no evidence from any physician who had given the jury any standard by which the fact in dispute could be properly determined, and, since the jury was not permitted to draw the conclusion of unskilfulness from the result of the operation of treatment, it seems to the court that to permit the jury to determine the case without some competent evidence as a standard from which it might be determined whether the services rendered by the defendants were done with reasonable care and skilfulness would be to permit a determination of that question from mere speculation and conjecture When a physician and surgeon assumes to treat and care for a patient in the absence of a special agreement he is held in law to have impliedly contracted that he possesses the reasonable and ordinary qualifications of his profession and that he will exercise at least reasonable skill diligence and care in his treatment of him This implied contract on the part of the physician does not include a promise to effect a cure, and negligence cannot be imputed because a cure is not effected, but he does impliedly promise that he will use due diligence and ordinary skill in his treatment of the patient so that a cure may follow such care and skill and this degree of care and skill is required of him not only in performing an operation, or administering first treatments but he is held to the like degree of care and skill in the necessary subsequent treatments unless he is excused from further service by the patient himself, or the physician or surgeon on due notice refuses to further treat the case In determining whether the physician or surgeon has exercised the degree of care and skill which the law requires regard must be had to the advanced state of the profession at the time of treatment and in the locality in which the physician or surgeon practices But where a physician or surgeon is employed as a specialist on account of his peculiar learning and skill, he is bound to bring to the discharge of his duty to patients employing him, as such specialist, that degree of skill and knowledge which is ordinarily possessed by physicians who devote special attention and study to the disease its diagnosis and treatment, having regard to the present state of scientific knowledge In either case the legal duty of the general practitioner of medicine and surgery and the legal duty of the specialist must be measured by some legal standard It must be tested by some competent evidence so that the jury may have before it a proper standard by which it may determine whether the acts or the omissions of the physician or surgeon constitute a neglect or omission of duty

Sufficient Information, Title to Act, Evidence of Practicing Medicine

(State v Erickson (Utah), 154 Pac R 948)

The Supreme Court of Utah affirms a judgment of conviction of the defendant, a chiropractor, of practicing medicine without a license The court says that the information was that he did wilfully and unlawfully" on a day and at a place specified practice medicine without holding a lawful certificate or license issued by the state board of medical examiners of the state of Utah, by then and there diagnosing treating operating upon, and adjusting for the physical ailments of one Thomas E Browning for a fee of

$2, then and there paid by the said Thomas E Browning to, and received by," the defendant It was contended that the information was insufficient because it did not contain a sufficient statement of the acts constituting the offense, or the particular circumstances necessary to a complete offense But the offense was stated in the language of the statute defining the practice of medicine, and where the statute defines the offense by the use of words which have a well recognized meaning, and designates the particular acts or means whereby the offense may be committed, to charge the offense substantially in the language of the statute is sufficient Had the statute but declared that any person "practicing medicine" without a license or certificate was guilty of an offense, then it might well be argued that an information stating the offense must, to be good, be expanded beyond the language of the statute

The court does not agree with the contention that the statute itself is unconstitutional because the subject is not clearly expressed in its title The title is "An act for the regulation of the practice of medicine and surgery in the state of Utah, and for the appointment of a board of medical examiners in the matter of such regulation and providing for the repeal of" certain named sections of the Revised Statutes of 1898, and as stated in Chapter 93, laws of 1911, "An act amending" a number of specified sections "C L 1907, for the regulation of the practice of medicine and surgery" Under that, the court thinks enactments defining the practice of medicine, prescribing the qualifications to practice, requiring a license to practice and making it unlawful to practice without one, and creating a board of medical examiners and prescribing its duties and powers are all within, and germane to, the title

Did the defendant practice medicine within the meaning of the statute? He, as a chiropractor, maintained an office Browning, the person named in the information, having sprained his foot or ankle, called on him at his office He examined the ankle and foot, which were in "a swollen and black and blue condition" He had Browning strip to the waist and lie on a table, and then began to manipulate his spine When "he came to a particular spot, he gave it a hard press, and then a little farther down gave another" He continued that operation for a considerable time and then operated a vibrator up and down the back He explained to the patient that the trouble was in the nerve centers of the third lumbar vertebra, and that the forces had been shut off, and that there was not sufficient nerve energy to heal the leg, and that he would have to readjust that particular lumbar and get it in its proper place, and that then there would be a sufficient flow of nerve energy to heal up the leg He also advised Browning on retiring to wrap a towel saturated with strong salt brine around the foot He gave him but one treatment or adjustment, for which Browning paid him $2 The court thinks the evidence justified a finding that the defendant practiced medicine within the meaning of the statute that he, for a fee, diagnosed, treated and operated on a physical or abnormal ailment or condition of another

Gross Unprofessional Conduct Justifying Revocation of License

(Senior vs State Board of Health (R I), 90 Atl R 340)

The Supreme Court of Rhode Island affirms a finding of the state board of health that defendant Senior had been guilty of gross unprofessional conduct in violation of Section 5 of Chapter 193 of the General Laws of Rhode Island of 1909, and that in consequence the certificate issued by the board authorizing him to practice medicine and surgery in the state should be revoked From the action of the board he appealed to this court The charges preferred by the secretary of the board were that the defendant had been guilty of gross unprofessional conduct, that he had violated the laws of the state, and that he had been guilty of acts which rendered him an unsuitable person to practice medicine On the hearing before the court, testimony was presented showing that he had been frequently guilty of drunkenness and of improper and indecent acts in public places, that in the year 1913 he had been twice convicted and sentenced as a common drunkard, that in October, 1915, he had been consulted by several persons to obtain the performance by him of illegal acts, and had named to them the price for which he would perform such acts The court says that the charges were sustained by the evidence, wherefore the finding of the board is affirmed and the license of the defendant to practice medicine and surgery in Rhode Island is revoked

Society Proceedings

COMING MEETINGS

Colorado State Medical Society, Glenwood Springs, Sept 5 7
Michigan State Medical Society, Houghton, Aug 15 17
Oregon State Medical Association, Portland, Sept 9 10
Utah State Medical Association, Salt Lake City, Sept 12 13

NEW YORK ACADEMY OF MEDICINE

Special Meeting, held July 13, 1916

The President, Dr Walter B James, in the Chair

SYMPOSIUM ON INFANTILE PARALYSIS

What We Know About the Transmission of the Disease

Dr Simon Flexner read a paper entitled "The Nature, Manner of Conveyance and Means of Prevention of Infantile Paralysis," which appears in The Journal, this issue, p 279

The Clinical Types of the Disease

Dr Henry Koplik Poliomyelitis is primarily an epidemic disease, and as a sporadic condition it has attracted very little notice All the epidemics which have thus far been recorded resemble each other very closely An attempt to connect this disease with the occurrence of cerebrospinal meningitis has developed into a belief that poliomyelitis is an entity, clinically occurring in epidemics in the late spring to late autumn and following the regular sporadic occurrence of the disease in limited numbers in the months following the winter and reaching into the late spring up to the time of the epidemic outbreaks Epidemics of this disease have been known to skip a year and always to crop up in the place of its original occurrence, which should give the thoughtful a hint as to its possible cause and epidemiology In all the epidemics thus far recorded, the symptomatology and clinical types have been much the same Though most of the scientific knowledge of the clinical types of poliomyelitis is borrowed from Swedish and Norwegian observers, Medin and Wickman, the first inkling of the epidemic nature of the disease was voiced by Colmer, an American physician, who in 1841 observed some form of paralysis in a child and obtained the history that in the locality in which the patient lived several similar cases had occurred and most of the patients had recovered Following him, Caverly in 1894 described an epidemic in Vermont, Taylor and Chapin later on observed the epidemic nature of the disease Aside from these observers, much of the clinical knowledge at present was due to Medin, who described the clinical types of acute epidemic poliomyelitis in 1884 before the International Congress, much to the astonishment of most pediatricians, who still retained the simple picture as retained in older textbooks, of poliomyelitis anterior as a simple, infantile paralysis In all, forty-two epidemics have been observed in America and on the continent, and this alone should establish the tendency of poliomyelitis to occur in epidemic form at certain seasons and remain sporadic until the time arrives for a new outbreak The disease selects the young as its victims Out of 886 cases in the epidemic of 1907, 571 patients were below 3 years of age, 771 below 5 years and three were under 6 months of age In the present epidemic, the youngest patient I have seen was 4½ months old and absolutely breast fed The most susceptible period was from 1 to 3 years of age

It is through the abortive type of the disease that these cases are spread to others In this type the disease does not go on to paralysis, the patient recovers, and the disease does not leave the host injured as to the muscular motor apparatus This type can be recognized so as to leave no doubt as to its distinct identity A child of 5 years is attacked with a headache, slight malaise and an attack of vomiting lasting five days, intense pain in both lower extremities radiating to the soles of the feet and worse at night, slight pain in the nape of the neck, lassitude cerebellar gait on walking increased reflexes in the lower extremities, and rectal temperature above 100 5 F In ten days the pains have disappeared the child is well and wants to go out and play The abortive cases present prodromes such as headache, weakness diminished reflexes and pain in the nape of the neck with or without vomiting and fever, still do not present paralysis and the patient recovers

The spinal or bulbospinal type is the most common, and gives the disease its name The patient has an attack of vomiting and slight fever, and within twenty-four hours the mother observes that the child cannot move one or the other extremity In these forms there may be no fever, but it is possible that in giving the history the mother may have overlooked the symptoms of fever, malaise and such indisposition as peevishness which may have preceded by a few days the paralysis In other cases the paralysis appears gradually Pain may continue to be quite severe, especially when the extremities are moved The paralysis may spread and involve not only the remaining lower extremity, but also the upper extremities the muscles of the back and respiratory muscles of the thorax and possibly the muscles of the abdomen As a rule in the purely spinal cases the paralysis appears and does not spread in the great number of cases In others it may spread from the extremities and involve the whole trunk even to causing bulbar paralysis of the respiratory centers But after the tenth day paralysis is not apt to spread to the bulbar medulla, though patients have been known to die after the fifteenth day Both the meningitis and cerebral types should be combined because of the cerebral symptoms which give rise to a picture closely simulating meningitis The meningitic form of poliomyelitis runs its course with cerebral symptoms A child of 3 is taken with vomiting for forty-eight hours, followed by rigidity of the neck with pain on flexion of the head, Brudzinski's sign and reflex Kernig's sign sopor and Macewen's sign, which may be slightly marked and also diminished knee reflexes Some patients may improve after a day or two, the fever may abate, and they may even be about and then have a recrudescence of fever, sopor rigidity delirium irritability, extreme hyperesthesia and pain in the nape of the neck In some cases the only palsy may be ocular, in others a slight facial palsy may be present which may be combined with a weakness in one or other extremity After a week the patient becomes brighter There is still, however, marked ataxia and Romberg's sign As convalescence is established, the ataxia is the last symptom to disappear The hydrocephalus and abnormal mental state may remain for some time after the temperature is normal On recovery, there are a slight strabismus ataxia and optic neuritis In one group of cases I saw unilateral ophthalmoplegia with hemorrhages into the retina In lumbar puncture lies the differentiation in the form of poliomyelitis from cerebrospinal meningitis The bulbar or pontine form of the disease deserves notice as a distinct form An infant breast fed 13 months of age is attacked with fever and vomiting The fever continues into the afternoon of the following day The temperature continues at 102 4 the infant is bright laughs and plays in the crib but there is a tired look about the face and eyes The knee reflexes are increased otherwise there is no paralysis that can be demonstrated In one case, ten days before the patient, aged 21 months was seen, he was taken with high fever and vomiting, and there were some green movements The fever continued in a less degree to the ninth day, when the mother noticed that the right side of the face was flat, there were tremulous movements of the head and arms and the patient was restless There was constant jactitation of the head insomnia and rigidity of the neck, but no palsies of the extremities, on the contrary, the patient exhibited great strength in both upper and lower extremities In other cases the outcome was not so favorable, there was an involvement of the nuclei which control deglutition and respiration In these cases the patient may be lost by paralysis of the respiratory centers The neuritic type included those cases in which pains in the extremities became a leading feature of the clinical picture Some of these patients developed paralysis, others did not They were referred to under the head of abortive cases The symptoms given justify a lumbar puncture in order to establish the character of the fluid which in poliomyelitis shows a lymphocytic cytology and an increase of globulin The examination of the blood was very uncertain As to prognosis, the low mortality of 10 per cent applied to children below 11 years of age and 27 per cent among older children and adults Twenty per cent of all patients completely recover, and the younger the child the better the prognosis

Abortive and Nonparalytic Cases, Their Importance and Their Recognition

Dr George Draper Cases are designated as abortive when attention is centered on the paralysis as the chief symptom of poliomyelitis but as our knowledge has grown it has become increasingly evident that in dealing with acute anterior poliomyelitis we are dealing with a general infection that presents a great variety of manifestations The cases that escape paralysis are just as important from the standpoint of the spread of the infection as the paralyzed cases and infinitely more dangerous The cases that have hitherto been called abortive should be called atypical if we consider those that develop paralyses as typical Unfortunately there is no possible way at the present time of determining the number of cases that are not paralyzed The figures vary greatly and undoubtedly the number of cases that are not paralyzed varies greatly in different epidemics There are certain indications however, that lead us to believe that the number of cases of this group is considerable It has been said that it is extremely rare to see more than one case of poliomyelitis in a family, but a very careful investigation where there has been one case in a family frequently shows that another child has had mild symptoms, as fever, general malaise and vomiting Furthermore, pathologic studies show not only that there may be lesions in the spinal cord, but also that the viscera and the entire lymphatic apparatus may be involved and we may find palpably enlarged lymph nodes This is evidence that we are dealing with a general infectious disease

In general all cases fall into the following groups 1 Gastro intestinal 2 Respiratory In these we may have the symptoms of influenza cough, lung signs and pains in the bones and joints 3 Febrile 4 A type characterized by symptoms of meningismus 5 The type in which paralysis occurs In the first three types we may have slight transient paralyses In the type showing paralysis we may have as prodromal symptoms any or all of the prodromal symptoms of the other types The intensity of the symptoms is no guide to the prognosis In this connection it is of interest to note that in fatal cases more extensive lesions of the cord have sometimes been found than were indicated by the symptoms That there should have been this general degeneration of cord without manifestations suggests that we may have lesions that do not give clinical evidence of their existence In times of epidemic every one is alive to these symptoms but it is not enough that the physician should say this is or is not a case of poliomyelitis In suspicious cases lumbar puncture should be made and the spinal fluid examined

The diagnosis is based, therefore, on gastro-intestinal respiratory and febrile symptoms Where we find the latter a search should be made for transient weakness and mild degrees of paralysis and for local muscle tenderness One point of value in diagnosis is the anterior spinal flexion sign It is a very striking thing that before paralysis sets in the spinal flexion sign is definitely present and this is probably responsible for the stiff neck and Kernig's sign The sign is elicited by having the child place his hands under his thighs and then flexing his trunk forward, doubling him up

The Present Epidemic — The Types Which it Represents

Dr Louis C Ager From June 20 to July 12, we cared for 320 patients with poliomyelitis in the Kingston Avenue Hospital The resident staff was thus brought face to face with a large number of serious problems and a large amount of work to be accomplished July 3, eighty-nine patients were admitted to the hospital The most striking feature in connection with this work was the change observed in many of these children as the result of the facilities offered for making them comfortable in the hospital Something has been done in the study of the infectivity of the disease, but the degree of infectivity has not yet been decided There must be a large number of cases of the abortive type that are not recognized In the Kingston Avenue Hospital we have at least eight series of cases in which there have been two or more cases in the same family A great many more instances of this kind would have been found if we had had more complete statistics in 1907 That there are practically no cases among the colored race is borne out by our experience, there has been no colored child admitted with poliomyelitis Some investigators have tried to find a relationship in the incidence of the disease in complected people, but no such relationship has been traced The incidence of the disease is likewise practically the same in all nationalities Another point that has been brought up is in reference to the affections of the liver and spleen We have not found anything in this respect so far as the clinical signs are concerned, there is no material enlargement of these organs, except in some fulminating cases This is a systemic infection, and, like tuberculosis in small infants, may involve the entire system We found only two cases of enlarged liver in sixty-seven cases The age incidence in the present epidemic is practically the same as in the epidemic of 1907 It is a peculiar fact that in epidemics in this country the age incidence is lower than in those on the other side Among eighty-seven cases observed rather closely, forty-six occurred between the ages of 2 and 5 years, twenty-two between the ages of 1 and 2 years, eight between the ages of 6 and 12, and three between 1 and 6 months They had two adult cases in this group, one in a woman 28 years of age and one in a pregnant woman of 21 years As to the type of the disease in our clinical work, we have distinguished three types, the encephalitic, the poliomyelitic and the meningitic Perhaps this classification is not scientific, but we have found it valuable for bedside work We found as usual that the lower extremities were most frequently paralyzed In a group of sixty-four cases examined, the lower extremities were involved in thirty-nine instances, in seven instances the upper extremities, in five there was facial paralysis, in thirteen cases the only definite symptoms were marked paralysis of the muscles of the back There were two typical ataxic cases The only place to take care of children with poliomyelitis is in a hospital, unless the conditions of the hospital can be exactly reproduced in the home

Laboratory Aids in the Diagnosis of Poliomyelitis

Dr Josephine B Neal It is well known that sporadic cases of poliomyelitis are frequently seen when no epidemic exists Because of this fact, during the past six years, it has been the lot of the Meningitis Division of the Department of Health to study both clinically, and by means of laboratory methods, many of the cases before the present epidemic occurred Most of the cases seen by us, both before and during this epidemic, have been atypical, and we have, therefore, been compelled, when endeavoring to make a diagnosis, to consider our laboratory findings with more than ordinary care Perhaps one of the most interesting experiments employed in the study of poliomyelitis has been the inoculation of monkeys by means of washings from the respiratory mucous membrane This was first successfully performed by Kling, Petterson and Wernstedt in 1911 Working with Dr Du Bois and Dr Zingher we obtained washings from the nose and throat in an abortive case two weeks after the incidence of the sickness With these we produced typical poliomyelitis in monkeys In sections of the brain, from one of these monkeys, a few globoid bodies similar to those described by Flexner and Noguchi were found A report of this work appeared in The Journal, Jan 3, 1914 Another laboratory method of some diagnostic value is the so-called neutralization test In this, serum from the suspected individual in the stage of recovery is mixed with an old fatal dose of an active virus These are incubated and later injected intracerebrally into monkeys Failure of the disease to develop indicates that the virus has been neutralized This test, however, does not furnish conclusive evidence of poliomyelitis, for serums from noses known to have been free from a recent attack of the disease have sometimes successfully neutralized the virus It is, however, quite obvious that laboratory methods requiring the use of monkeys are both too complicated and too expensive for ordinary diagnostic use A study of the blood picture was exhaustively made by Peabody, Draper and Dochez of the Rockefeller Institute It was shown that there existed a varying increase in leukocytes and a polymorphonucleosis This is characteristic of so many other diseases that it is of little help in diagnosis

The procedure which we find to be our most reliable and valuable aid in the recognition of poliomyelitis is the examination of the spinal fluid In the first twenty-four to forty-eight hours after its onset, poliomyelitis must be differentiated from the early stages of epidemic meningitis or mild purulent meningitis and also from a meningism accompanying pneumonia or other infection The clinical pictures presented by the above mentioned diseases are quite similar, and it is in the distinguishing between them that the examination of the spinal fluid affords us the most reliable information In the early stages of poliomyelitis, the spinal fluid is clear, or rarely, it may be slightly cloudy It often shows a good fibrin web formation There is a slight or moderate increase of albumin and globulin and also of the cellular elements The reduction of Fehling's solution is prompt Those poliomyelitic fluids which are cloudy present a polymorphonucleosis which may run as high as 90 per cent but which we usually find to be about 60 per cent As a rule, however, 80 per cent or more of the cells are mononuclears In examining such fluids we have frequently observed the presence of large mononuclear cells which we believe to be in a measure characteristic of poliomyelitis We are now studying these by means of the various differential stain the hope that our research in this direction may de something of positive diagnostic significance

Two rare types of spinal fluids sometimes occur in myelitis when the hemorrhagic process has been mo usually extensive The first of these is of the true rhagic character, the red blood cells being evenly throughout the field When collected in successiv the specimens are all hemorrhagic, showing no chang intensity of the hemorrhage This serves to differ from bloody fluids obtained by the accidental punct vein The second of these rare fluids illustrates the syndrome of Froin It has a characteristic yellow coagulates spontaneously The spinal fluid in early purulent meningitis shows a varying degree of clo except in very rare instances when it may be clear A increase in albumin and globulin is usually found here occurs in poliomyelitis with a poorer reduction of Fel solution The cells in these fluids of purulent meningit 90 per cent or more polymorphonuclears, and the etio organism is found except in the mildest cases In mild cases of meningitis probably of epidemic variet meningococci may never be positively demonstrated fluid In purulent meningitis due to other organisms practically always appear later In one instance I h a clear fluid from an early case of epidemic me This was of about eighteen hours' standing Alth cellular reaction was so slight, the meningococcus is strated to be present in the fluid by smear and cultu fluid in meningism is increased in amount but pr normal in character When seen a week or more a onset, cases of poliomyelitis, especially if presenting c symptoms, must be differentiated from tuberculous gitis The spinal fluid in both these conditions is cle increased in amount The albumin and globulin content of both is also increased but usually in poliomyelitis the increase of both these last named elements is not so great as occurs in tuberculous meningitis The reduction of Fehling's solution is usually better The cellular element is also usually less in poliomyelitis In both conditions at this stage there is ordinarily a mononucleosis although in some acute cases of tuberculous meningitis there is a polymorphonucleosis If however, as may happen occasionally the increase of albumin and globulin is greater than usual and the reduction of Fehling's solution is not so prompt, then the determination of the disease must wait on the results of animal inoculation if it has been impossible to demonstrate tubercle bacilli in fluids (A detailed study of the spinal fluids of poliomyelitis examined at the research laboratory was made by Dr H L Abrahamson of the meningitis division, and published in the *American Journal of Diseases of Children*, November 1915) In brief, then a spinal fluid increased in amount and showing a slight to moderate increase in albumin and globulin, a good reduction of Fehling's solution and a varying cellular increase, mostly mononuclear makes the diagnosis reasonably certain in fairly early cases of suspected poliomyelitis A slightly cloudy fluid occurring very early in the disease must be differentiated, as noted above from a similar fluid in an early purulent meningitis Fluids from the cerebral or encephalitic type of poliomyelitis sometimes may be differentiated from fluids of tuberculous meningitis only by animal inoculation

The Importance of the Present Epidemic

Dr. Haven Emerson During the month of May only five cases were reported Fifteen more that had their onset in May were not reported until in July In June there was a rapidly rising incidence of the disease beginning abou June 20 and increasing until the highest point was reached about July 11 Since that time there has appeared to be a recession, but we cannot as yet say that it is permanent A study of the death rates of diphtheria, scarlet fever, measles and diarrheal diseases in this city during the past six years and during the first six months of this year show that the incidence and mortality from poliomyelitis is small by comparison During the first six months of 1916 there were 884 deaths from diarrheal disease and fifty-seven from poliomyelitis One of the chief points of interest in connection with the epidemic is the psychologic state of the lay public The reason for the present panic on the part of the public is probably because this is the first epidemic of poliomyelitis in this city in which the disease has been made reportable, and also the first in which there has been an effort at hospitalization We must acknowledge that our present method of dealing with the disease is an experiment At the onset of the epidemic the health department was confronted by two alternatives The one was to avoid publicity and to see what could be done by the medical control of cases The other was a campaign of publicity which offered the better prospect of the real control of the disease The latter method also offered the opportunity of giving the public a practical lesson in cleanliness and the control of infectious disease Consequently we decided on our present campaign of publicity and hospitalization In 1907, it was not until November, when the epidemic was drawing to a close, that any organized attempt was made to study it This is the first epidemic in this city in which a study has been made at the time the patients were coming down with the disease It is estimated that in the epidemic of 1907 there were 2 500 cases, and that the mortality was about 5 per cent. In a group of 700 cases accurately studied, the mortality was found to be 27 per cent The average mortality as estimated in foreign epidemics has been from 7 to 10 per cent During the present epidemic the mortality thus far has been 18 7 per cent The most important factors in dealing with infantile paralysis are early diagnosis and the placing of all patients under neurologic and orthopedic observation This may save the individual and the public from the future burden that permanent crippling of the victims of infantile paralysis implies The early recognition of the condition is the most important factor in preventing the spread of the virus among the healthy Poliomyelitis is essentially a disease of early childhood At least 99 per cent of the children affected in this epidemic have been born since the last epidemic

Of about 1 600 patients with poliomyelitis who have come under the observation of the Health Department during the present epidemic 917 have been under 5 years of age and 14 per cent have been between 5 and 10 years It may be said that about 99 per cent of the patients have been under 10 years of age Four hundred and three cases have shown paralysis In about 50 per cent of these the paralysis made its appearance in the course of a few days after the onset of the disease The longest period after the onset of the disease at which paralysis made its appearance was sixteen days In between 5 and 8 per cent of the cases there have been secondary or subsequent cases in the same family When we get a second or third case in the course of three or four days after the onset of the first case it is safe to classify it as a secondary case

These facts are important since the public has not been impressed previously by the infectious nature of the disease Our position in dealing with suspected carriers is rather difficult since we are unable to detect carriers as can be done in diphtheria and typhoid fever It has thus been a question whether one had a right to interfere with a supposed carrier This epidemic has given us the opportunity to make use of the concerted action of the hospitals of the city The present action will probably result in some plan for cooperation that can be used in times of emergency in the future which will be a great benefit to the public and will favor the scientific study of disease Our experience with infantile paralysis has taught us the necessity of having a staff suited to the needs of these patients Such a staff should include a laboratory diagnostician, a neurologist, an orthopedist and a pediatrician I would urge hospitals that are likely to be called on to care for these cases to organize a staff of this type The after-care of patients with poliomyelitis offers a great opportunity for the use of social service organization There is need of concentrated follow-up home work in all of the cases This is a need which will continue for years after the patients have left the hospital A large number of hospitals in the city are taking cases of poliomyelitis and many have signified their willingness to do so The quarantine service has been cooperating with the department of health and Ellis Island has offered accommodations for patients if they shall be needed This cooperation among hospitals is a notable contribution to our progress

In our work it has been most discouraging to meet with the unrecognized and neglected cases of infantile paralysis We meet instances in which slight illness followed by slight limp have been disregarded by the mother These patients may suffer permanent injury because of neglect, and are a fruitful source of infection I wish to call your attention to the degree to which the medical profession will sacrifice itself for the public welfare Many instances have come to my attention in which physicians have for the time being lost their practice because they have been taking care of cases of infantile paralysis their patients being afraid to come to their offices I hope that wherever you see this attitude on the part of patients you will do all you can to discourage it and to see that other physicians do not suffer because of their willingness to sacrifice themselves for the public good No health department can control an epidemic and secure proper police enforcement of its regulations without the cooperation of the medical profession, so we appeal to you to give us your support through the early diagnosis and prompt report of all cases of this disease coming under your observation

Discussion on Infantile Paralysis

Dr William H Park The sick person and the carrier are the chief sources of infection There is no evidence that a fly or insect transmits the disease though they may carry the disease We must then guard against the spread of the disease by the sick person, the carrier and filth that has been contaminated with the virus If we find that an insect is a carrier it will probably be in a subordinate degree It will be very difficult to prove that an animal that has been inoculated is a carrier of the infection Even if we could detect the carrier of poliomyelitis as we do those of diphtheria, pneumonia or scarlet fever, I doubt if we would act very differently than we are now doing We have the knowledge by which we may detect the carriers of diphtheria and pneumonia, and yet we have done little in this direction to prevent these diseases It is not in lack of knowledge that the difficulty of controlling the carrier lies In the light of what has been done in other diseases by the use of vaccines or serums it is possible that we may learn to do more in poliomyelitis, but at present we have no practical knowledge that we can offer

Dr Walter B James Two questions have been asked Some one asks whether it is a safe plan to admit cases of poliomyelitis to a general hospital A physician from the midst of the infected district asks what the modern treatment of poliomyelitis is

Dr Haven Emerson We regard it as perfectly safe to admit patients with poliomyelitis into general hospitals The disease is rarely communicated in general hospitals to other persons

Dr Henry Koplik The treatment of the disease at this time can be only symptomatic The patient should be isolated and kept absolutely quiet Any one in attendance on a case of poliomyelitis should wear a gown and should cleanse his hands on leaving the patient A German physician in Munich has recommended that the patient be placed in a Bradford frame so that he may be kept absolutely quiet In addition to perfect quiet, the patient should have plenty of fresh air and an easily assimilable diet The bowels should be kept open There is no particular remedy except those supposed to have an effect on the general nervous system Liberal doses of hexamethylenamin have been employed, but its utility has not been definitely established Lumbar puncture seems to offer certain advantages In the first place the removal of a certain amount of spinal fluid which is toxic may be of some benefit Lumbar puncture gives an opportunity to make a diagnosis, it removes pressure, which is an advantage It is because of this pressure that we get Macewen's sign When paralysis begins, it is a relief to the patient to keep his limbs absolutely quiet In some cases a cast may be applied to prevent contractures We can sometimes see when the cast is removed that it has overcome contracture The contracture may recur later, and then the patient should be referred to an orthopedist For the symptoms referable to the nervous system, anodynes, as chloral and the bromids, may be administered Opium should not be used unless it is absolutely necessary Charcot has advocated the intramuscular injection of strychnin as soon as the pain and fever have ceased One-fortieth grain daily may be given over a period of thirty days, selecting different groups of muscles for the injections Many patients regain their power without these injections, and many do not, so that it is very difficult to give an accurate judgment as to their utility Warm baths may sometimes prove a great blessing, if they can be given without moving the patient too much Massage in some instances seems to aggravate the condition, in others it seems to relieve the pain In some little patients potassium iodid in large doses seems to have an anodyne effect In a few instances its action has been almost miraculous The great variety of nostrums that have been exploited as suitable for use in infantile paralysis should be avoided There should not be too much activity in the treatment of these patients No attempt should be made to increase the tonicity of the muscles until the active stage of the disease has passed

Dr Leon Louria An epidemic can be stopped only by an early recognition of those cases that do not show any paralysis We must revise our medical nomenclature so that we include and treat under the term "poliomyelitis" cases that do not show paralysis In a few cases I have noticed a very interesting occurrence A child would be taken ill with an indefinite febrile manifestation and sore throat He would be treated with the ordinary remedies employed in slight illnesses of this kind and would apparently recover In three or four days there would be a recurrence when the definite symptoms of poliomyelitis would appear and a definite paralysis would show itself If these cases are recognized early and the nervous system given the rest it requires, the additional trauma consequent on continued activity will be prevented and the virus may not exert so great an effect The same treatment should apply to the abortive type of the disease as is given to the paralytic form

Dr Samuel J Meltzer The papers presented have failed to cover one essential phase, and that is the treatment of the disease The reason for it is to be found, perhaps, in the discouraging fact that there is at present practically no treatment for poliomyelitis I wish to bring forward three promising therapeutic measures based essentially on personal work

Any inflammatory focus is surrounded at the periphery by zones of hyperemia, exudation and edema Thirteen years ago, in experimenting on rabbits' ears, we found that an injection of epinephrin reduces an entire inflammatory swelling to a very small focus in the center The peripheral zones of edema and active hyperemia disappear completely for some time Several years ago Dr Auer and I found further that an intraspinal injection of epinephrin into monkeys produces a long lasting effect on the blood pressure, longer than by any other method of administration, more than one hour may pass before the blood pressure returns to normal On the basis of these observations and on the further plausible assumption that the early stages of the paralytic effects in poliomyelitis are not caused by the chief inflammatory focus but by the peripheral zones of active hyperemia, exudation and edema, I induced Dr Clark, then working under Dr Flexner at the Rockefeller Institute, to make the following experiments Monkeys dying from experimental poliomyelitis received intraspinal injections of epinephrin The beneficial effect was most striking Animals which were paralyzed and moribund at the time of the injection were seen several hours later eating bananas which they held themselves The paralytic conditions were strikingly improved and the life of the animals was prolonged in some cases for several days The animals finally died, but in this series of Dr Clark's experiments, all animals received *reliably fatal* doses of the virus It is important to bear in mind that the mortality in human infantile paralysis is generally not more than 25 per cent No death is usually due to respiratory paralysis It is highly probable that in many instances the respiratory paralysis is not produced by the chief inflammatory focus, but by the extensive peripheral zones of exudation and edema, which are surely capable of interfering with the vitality of the nerve centers controlling the respiratory mechanism If the exudation and edema could be removed for some time, the lives of a few or of many patients may be saved, namely, if in these cases it just happens that the ascending progress of the actual inflammation came to a standstill On the basis of these facts and considerations I recommend to inject epinephrin intraspinally in every case of infantile paralysis, the injection to be repeated from four to six hours The procedure may save life, and in surviving cases it may reduce the extent of the final lesion There is no danger to this procedure Monkeys stood well as large a dose as 2 c c in a single injection However, in human infantile paralysis the injections should be begun with a dose of 0 5 c c of one to one thousand solution of epinephrin until more is learned about the effects This dose may be repeated every four to five hours increasing to 1 cubic centimeter in a single dose When pulmonary edema is present the treatment should be used most cautiously

The second suggestion is to administer artificial respiration by means of our apparatus for pharyngeal insufflation as soon as the patient shows a degree of unconsciousness and respiratory insufficiency It is an easy and reliable procedure

The third suggestion is to administer oxygen under pressure in a respiratory rhythm by an apparatus which I have recently devised and used on human beings in several instances It abolishes rapid cyanosis and may save life It may even act specifically on the virus of poliomyelitis

Current Medical Literature

AMERICAN

Titles marked with an asterisk ( ) are abstracted below

American Journal of Medical Sciences, Philadelphia

July CLII No 1 pp 1 156

1 What Therapy Means O T Osborne New Haven, Conn
2 Treatment by Splenectomy of Splenomegaly with Anemia Associated with Syphilis H Z Giffin Rochester Minn
3 Comparative Toxicity of Morphin and Morphin Narcotin (Narcophin) D I Macht Baltimore
4 Multiple Primary Intravascular Hemangio Endotheliomata of Bone Associated with Symptoms of Multiple Myeloma D Symmers and M Vance New York
5 *Distribution of Tetanus Toxin in Body H E Robertson, Minneapolis
6 Case of Idiopathic Purpura Hemorrhagica C R Minot Boston
7 Spinal Fluid Syndromes of Nonne and Froin and Their Diagnostic Significance I M Hanes Richmond, Va
8 Chylothorax Report of Case P Lewin Chicago
9 Energy Index of Circulatory System J H Barach Pittsburgh
10 Blood Pressure in Pneumonia F Tice, Chicago
11 Regeneration of Bone I D Smith, Chicago

2 **Splenectomy in Syphilitic Splenomegaly**—Three cases of splenomegaly definitely associated with syphilis are reported by Giffin Briefly, the history of these cases is as follows I Marked splenomegaly, severe anemia, no hematemesis, history of syphilitic infection not obtained, Wassermann, total inhibition, antisyphilitic treatment without definite improvement, splenectomy, treponemas in walls of splenic vessels, excellent health one year later II Moderate splenomegaly, marked anemia of the secondary type without leukocytosis, liver contained palpable gummas, no hematemesis, negative history of syphilis in both patient and husband, Wassermann test, total inhibition, no improvement of anemia on antisyphilitic treatment, splenectomy, prompt improvement in general health and blood III History of syphilitic infection at 21 Three positive Wassermann tests elsewhere during the last two years, Wassermann test negative at the time of examination, moderate splenomegaly, slight anemia, recurrent hematemesis, long continued antisyphilitic treatment attended with only partial relief, splenectomy, one gumma and a few treponemas in spleen, excellent condition three months later

3 **Toxicity of Morphin and Morphin-Narcotin**—The comparative toxicity of morphin and narcophin was studied on various animals by Macht Pigs, fish, terrapins, mice, rats, guinea-pigs, rabbits, pigeons, cats and dogs It was found that in general the toxicity of narcophin is about the same as the same weight of morphin Narcophin consists of one-third its weight of morphin meconate and two-thirds its weight of narcotin meconate Inasmuch as the toxicity of narcotin is very low, the author has here a distinct potentiation of the toxicity of morphin Macht cautions that it is therefore, not advisable to administer narcophin clinically in doses larger than those of morphin

4 **Hemangio-Endotheliomata of Bone**—Symmers and Vance describe a lesion of the osseous system attended by symptoms indistinguishable from those of the multiple myelomas and associated with histologic features which combine with the clinical characteristics to form an apparently unknown disease The patient, male, aged 43 years, complained of severe pain in the left gluteal region extending upward to the tenth dorsal vertebra, but not involving the lower extremities The pain had grown progressively worse during the thirteen months previous, it was burning in character, continuous in point of time and severest at night Physical examination disclosed a small, indurated exceedingly painful mass lying just to the left of the anus, and attached to the tuberosity of the ischium Roentgenographic examination showed irregularities in the periosteal outlines of the left ischium and signs of infiltration of the adjacent tissues The corresponding hip joint was intact In the course of the next two months the patient began to complain of tenderness and pains in the right lumbar region and buttock, in the upper part of the right thigh and in the axillary region of the right side The manubrium sterni, the upper end of the right humerus, and the upper segment of the occipital bone were similarly affected In the course of the succeeding five months two tender masses became palpable in the occiput and the movements of the left thigh and right arm grew to be exquisitely painful Roentgenograms revealed complete absorption of the first rib on the right side and of the left ischium from the symphysis to the acetabulum and infiltration of the soft tissues of the vicinity, together with involvement of the upper end of the right humerus and fracture of the surgical neck In the course of a few weeks there were signs of widespread destruction of the vertebrae The urine was twice examined for Bence-Jones protein with negative results

The tumor was curetted on several occasions The unit of the tumor is a thin-walled blood vessel, lined by a single layer of flattened endothelial cells, the lumen distended by red blood corpuscles the whole embedded in a stroma of poorly cellular fibrillar connective tissue arranged around spicules of bone Here and there, the lining endothelium may be seen as a uniformly growing circumferential layer from five to twenty cells in depth, and from this point the process of proliferation may be followed through various stages leading to occlusion of the lumen by spindle-shaped tumor cells In other cases the overgrowth of endothelium commences at the periphery of the vessel as one or more armlike projections and the lumen is eventually occluded An extraordinary histologic feature consists in proliferation of the endothelium in such a way as to subdivide the vascular lumen into one or more compartments filled by red cells, obviously representing an attempt to form new vascular channels

5 **Distribution of Tetanus Toxin in Body**—In tetanus the path of attack of the toxin in the central nervous system is the axis cylinders of the cerebrospinal nerves Antitoxin travels in the lymph channels, and hence the passage of toxin cannot be interrupted Therefore, Robertson says, plans for prevention and treatment should take cognizance of these paths of travel

8 **Chylothorax**—Lewin's patient developed lymphosarcoma of the mesentery Metastasis occurred in the inguinal, axillary and abdominal wall lymph glands and in the thoracic duct The tumor growing in the duct, or metastases in the mediastinal lymph glands caused obstruction, partial or total, of the duct with consequent transudation of chyle into the pleural cavities

10 **Blood Pressure in Pneumonia**—The Gibson rule is as follows When the arterial pressure, expressed in millimeters of mercury does not fall below the pulse rate expressed in beats per minute the fact may be taken as of excellent augury, while the converse is equally true Of fourteen cases reported by Tice in which the blood pressure was constantly, or in greater part below the pulse rate, 8 complied with the rule, or 57 1 per cent Seventeen cases in which the blood pressure was constantly, or in greater part, above the pulse rate, 12, or 70 5 per cent, complied with the rule Of the total of the two groups 31 cases 20, or 64 5 per cent, verified the observations of Gibson A reasonable explanation for four of the five discrepancies in the first group is to be found in the presence of a nephritis in three and a myocarditis and obesity in the fourth In the second group, of the 6 deviations from the rule, 3 were comparatively young, with soft elastic vessels, in which presumably a relatively lower pressure existed before the onset of the pneumonia, or, at least, were able to withstand a greater depression of the circulation Excluding the 7 cases in which a reasonable exception existed, of the remaining 24 only 4 failed to comply with the rule Aside from the prognostic significance, the blood pressure and pulse ratio have been of the greatest assistance and satisfaction as a guide to the administration of cardiac stimulants In some no stimulation was used, while in others one or two intravenous injections of digitalis were sufficient to reduce the pulse rate, increase the blood pressure, and produce a crossing of the curves

American Journal of Public Health, Boston

June VI No 6 pp 533 634

12 Sanitary Districts in Analysis of Municipal Mortality and Morbidity Data R E Chaddock New York

13 Social Aspects of Industrial Hygiene D B Armstrong, New York
14 Rural Sanitation, Definition, Field, Principles, Methods and Costs W S Rankin, Raleigh, N C
15 Venereal Disease Control in Oranges F J Osborne, Orange, N J
16 Some Observations on Causes of High Bacterial Counts in Market Milk H D Pease, New York
17 Bacterial Testing vs Dairy Inspection C E North, New York
18 Studies on Classification of Colon Typhoid Group J B Thomas and E A Sandman, Baltimore
19 Confirmatory Tests for B Coli in Routine Water Examinations W H Frost, Cincinnati
20 Report of Committee on Medical Inspection of Schools W H Peters, Cincinnati
21 Report of Committee on Venereal Diseases W F Snow, New York
22 Report of Committee on Refuse Collection and Disposal S A Greeley, R Hering, W F Morse, E R Conant and W T Knowlton
23 Present Status of Score Card of Milk Quality H A Harding, Urbana, Ill

American Journal of Physiology, Baltimore

July, XLI No 1 pp 1 141

24 Comparative Vasomotor Reactions in Branches of Arterial Tree R E L Gunning, Chicago
25 *Bone Marrow as Source of Prothrombin C K Drinker and K R Drinker, Baltimore
26 *Experiments with Oil of Chenopodium and Cardiac Stimulants on Isolated Frog Heart W Salant and A E Livingston, Washington, D C
27 *Conditions of Activity in Endocrine Glands Electric Response as Index of Glandular Action W B Cannon and M Cattell, Boston
28 *Id Secretory Innervation of Thyroid W B Cannon and M Cattell, Boston
29 Id Influence of Suprarenal Secretion on Thyroid W B Cannon and M Cattell, Boston
30 *Pancreas Deficiency and Vasomotor Irritability R G Hoskins and R E L Gunning, Chicago
31 Vasomotor Reactions from Stimulation of Floor of Fourth Ventricle S W Ranson and P R Billingsley, Chicago
32 Nature of Splanchnic Rise in Blood Pressure R Burton Opitz and D J Edwards New York
33 Depressor Action of Thoracic Sympathetic Nerve and Its Branches R Burton Opitz, New York
34 Localization of Primary Pacemaker in Turtle's Heart B H Schlomovitz and C S Chase, Iowa City, Iowa
35 Conditions of Physiologic Conduction in Irritable Tissues Electrolytic Local Action as Basis of Propagation of Excitation Wave R S Little, Worcester, Mass
36 Cryoscopic Measurement of Osmotic Difference Between Resting and Fatigued Muscle A R Moore, Bryn Mawr, Pa

25 **Bone Marrow as Source of Prothrombin**—Evidence is presented by the Drinkers that fibrinogen is not formed in the bone marrow, but that prothrombin is formed there in large amounts This prothrombin does not arise either from leukocytes, lymphocytes, myelocytes, nucleated red cells, or from wandering endothelial cells The megacaryocytes are the probable source of the marrow prothrombin

26 **Effect of Oil of Chenopodium on Frog Heart**—Oil of chenopodium according to Salant and Livingston produces marked depression of the isolated frog heart, the effect increasing with the concentration and successive perfusions The fresh heart is less sensitive to oil of chenopodium than one which has been perfused for some time Olive oil added to Ringer's solution causes cardiac stimulation which may become more marked later in the experiment Oil of chenopodium is less active in the presence of olive oil Epinephrin and digitalis were found to be antagonistic to oil of chenopodium Caffein produced slight stimulation when perfused with oil of chenopodium, but in some experiments it aided cardiac depression It is suggested that the action of oil of chenopodium may be due to disturbance of the lipoids of the heart, and that the antagonistic action of olive oil, digitalis and epinephrin may also be correlated with disturbance of lipoid metabolism in the heart Oil of chenopodium probably affects the muscular substance in the frog heart

27 **Electric Response as Index to Glandular Action**—Because (1) an electric change accompanies secretion of saliva, even though the blood supply is shut off from the gland, or the flow through the duct is stopped, and because (2) the change is absent when secretion is absent although each of the conditions attendant on secretion—as contraction of blood vessel, relaxation of blood vessels, faster flow of blood, slower flow of blood—may severally be induced, the conclusion is drawn by Cannon and Cattell that the electric change is a manifestation solely of the secretory process When the action current indicates a maximal activity of the submaxillary gland, excited by sympathetic impulses the electric response can be augmented by chorda impulses and vice versa, sympathetic impulses are ineffective during the height of an adrenin effect and chorda impulses cause no increase while pilocarpin is strongly operative The direction of the action current from the submaxillary gland may be reversed although the physiologic response to stimulation remains as usual Reversal is therefore not a sign of a reversed process in the gland

28 **Secretory Innervation of Thyroid**—Evidence is offered by Cannon and Cattell to show that the nonmedullated nerves distributed to thyroid cells belong to the sympathic and not to the cranial division of the autonomic system that their effects are not indirect through alterations of blood supply, that they are indeed true secretory nerves

30 **Pancreas Deficiency and Vasomotor Irritability**—The observations made by Hoskins and Gunning do not support the theory that the pancreas normally exerts a depressing influence on the sympathetic nervous system

Archives of Pediatrics, New York

June, XXXIII, No 6 pp 401 480

37 Accidents and Diseases of Early Weeks of Life L E LaFetra, New York
38 Care and Feeding During First Month of Life G R Pisek, New York
39 *Chloroma, Report of Two Cases E W Gould and L T LeWald, New York
40 Obscure Manifestations of Otitis Media in Infancy and Childhood J A Colliver, Los Angeles
41 Necessity for Early Diagnosis and Continuous Treatment in Congenital Syphilis J S Read, Brooklyn

39 **Chloroma**—These two cases are said to be the first in which a Roentgen examination was made There was marked enlargement of the mediastinal lymph nodes with slight displacement of the trachea to the right, a distinct separation of the coronal suture, producing a wedge-shaped gap measuring 1 cm at the vault Distinct enlargement of the liver and of the spleen The medullary portion of the long bones showed a peculiar mottling due to rarefied areas The periosteum was distinctly raised from the surface of the bone over the greater portion of the shaft The epiphyseal region showed comparatively little departure from normal, except for changes above noted

Boston Medical and Surgical Journal

July 6 CLXXV No 1 pp 1 34

43 Leonardo Da Vinci's Scientific Research of Vascular System (To be continued) A C Klebs, Washington, D C
43 *Menace of Syphilis of Today to Family of Tomorrow J H Blaisdell, Boston
44 Vaginal Hysterectomy for Procidentia, Report of Fifty Cases P E Truesdale, Fall River
45 General Practitioner's Apologia Pro Vita Sua A F Downing, Cambridge
46 Anesthesia E L Young, Jr, Boston
47 Treatment of Paresis by Intraventricular Injections of Diarsenolized Serum, with Presentation of Cases P C Knapp, Boston

43 **Menace of Syphilis of Today to Family of Tomorrow**—In thirty families studied by Blaisdell, 59 out of 62 parents were probably infected Of 132 possible children, only 23, most of whom were born before their parents' infection, were healthy Of the remaining 109, syphilis claims through miscarriage, later death, or congenital disease at least 83 pregnancies Blaisdell says that syphilis will appear in the home of tomorrow in proportion to the inadequacy of treatment among the "men and women of the street" of today

Bulletin of Johns Hopkins Hospital, Baltimore

July, XXVII, No 305, pp 193 220

48 *Chemical Studies on Case of Bichlorid Poisoning D S Lewis and T M Rivers, Baltimore
49 Methods Employed on Second Surgical Division of New York Hospital F W Bancroft, New York
50 William Budd, Pioneer Epidemiologist W C Rucker, Washington, D C

48 **Studies of Bichlorid Poisoning**—The necessity of prolonged and vigorous treatment of every case of bichlorid poisoning is strongly emphasized by Lewis and Rivers Many apparently moribund individuals have been saved by properly directed and vigorously pushed therapeutic measures Death should be the only indication for a discontinuance of treatment prior to the complete recovery of the patient Retention of waste nitrogen is undoubtedly a factor in the early fatal issue of these cases There are rarely any signs of uremia The protein sparing powers of the carbohydrates are of the greatest value in delaying the appearance of the extreme grades of nitrogen retention which usually precede death If carbohydrate cannot be retained by mouth, glucose may be given intravenously in a 10 to 50 per cent solution In addition to its protein sparing action, the glucose itself acts as a mild diuretic Alkalies have a decidedly beneficial action Large doses of sodium bicarbonate given intravenously soon after the taking of the *poison* exert a protective action in bichlorid poisoning The diuretic action of the alkalies is well known

Bulletin of Lying-In Hospital of City of New York

July X No 4 pp 209 262

51 Conservative Obstetrics Some Lessons Learned in Twenty Five Years' Service at Philadelphia Lying In Charity G M Boyd Philadelphia
52 *Postmortem Cesarean Section Report of Ten Cases J A Harrar New York
53 Report on Four Cases of Ruptured Pelves W A Morgan New York.
54 Case of Congenital Atresia of Duodenum J R Losee New York
55 Posterior Dislocation of Lower Humeral Epiphysis as Birth Injury E D Truesdell New York
56 Syphilis in Mother and Infant J R Losee, New York

52 **Postmortem Cesarean Section**—In the cases presented by Harrar the longest interval between the death of the mother and the delivery of a living infant was seven minutes One delivered after eight minutes gave a few feeble gasps and died shortly after birth One delivered after an interval of twenty minutes had a feebly beating heart but never made any attempts at respiration The obvious observation is that the success of the operation depends very much on the promptness with which it is done Unless there is positive proof that the baby is dead when the mother succumbs it is justifiable to proceed at once to postmortem cesarean section Except in operating on the dying woman, asepsis and the time necessary to assure it may be ignored With any cutting instrument at hand the abdomen and uterus are quickly and freely incised and the child extracted The uterus has occasionally been observed to contract after the extraction of the child The second point emphasized is the importance of persisting in prolonged efforts at artificial respiration as long as any intermittent contraction can be appreciated in the baby's heart by pressing the fingers up under the left costal margin The children are almost invariably born in severe asphyxia and great patience is required in their resuscitation

Florida Medical Association Journal, Jacksonville

June II No 12 pp 353 387

57 Medical Profession and Health Conservation R H McGinnis Jacksonville
58 Physician as Aid to Industrial Progress E W Warren, Palatka
59 Indigestion M H Smith, Jacksonville
60 Creeping Eruption G H Edwards Orlando
61 Treatment of Malarial Hemoglobinuria K Cross Crystal River

Indiana State Medical Association Journal, Fort Wayne

June IX No 6 pp 223 276

62 Small Cysts of Ovary J A Work Jr, Elkhart
63 *Tonsil M Ravdin Evansville
64 Chronic Suppurative Ethmoiditis W S Tomlin Indianapolis
65 *Blood Clot Dressing in Simple Mastoid Abscess K K. Wheelock Fort Wayne
66 Vascular Hypertension in Eye Ear Nose and Throat Diseases. W J Leach New Albany

63 and 64 Abstracted in THE JOURNAL, Oct 30 1915, pp 1576 and 1577

65 Abstracted in THE JOURNAL, Oct 30, 1915, p 1578

Journal of Experimental Medicine, Baltimore

July XXIV No 1, pp 1 104

67 Effect of Adult Chicken Organ Grafts on Chick Embryo J B Murphy New York
68 *Immunity Factors in Pneumococcus Infection in Dog C G Bull New York
69 *Agglutination of Bacteria in Vivo C J Bull, New York
70 *Agglutinability of Blood and Agar Strains of Typhoid Bacilli C G Bull and I W Pritchett, New York
71 Cultivation of Tubercle Bacillus from Sputum by Method of Petroff R A Keilty, Philadelphia
72 *Variations in Pneumococcus Induced by Growth in Immune Serum L M Stryker New York
73 *Conditions and Characters of Immunity Produced in Guinea Pig by Instillation of Horse Serum into Nose H Sewall and C Powell, Boulder Colo
74 Differentiation of Cells as Criterion for Cell Identification, Considered in Relation to Small Cortical Cells of Thymus V Danchakoff New York

68 **Immunity Factors in Pneumococcus Infection**—It is suggested by Bull that the incubation period of infectious diseases is due to the fact that the infecting agents must become adapted to the adverse conditions encountered in the newly infected host before they can multiply sufficiently to produce the symptoms of disease It is further suggested that epidemics may arise because *the infectious agent is* passed from person to person in the ascending stage of the disease and thus enters new hosts in a state of maximum resistance to the natural antibodies of such individuals When early contacts are avoided epidemics tend to subside because the infectious agent is weakened by the action of acquired antibodies during the period of convalescence

69 **Agglutination of Bacteria in Vivo**—The degree of agglutination and opsonization of bacteria within the animal body Bull found is inversely parallel to the infectiousness of the bacteria for the host

70 **Agglutinability of Typhoid Bacilli**—Cultivation on 10 per cent rabbit blood agar did not affect the agglutinability of fifty-seven strains of typhoid bacilli Bull and Pritchett were unable to confirm the observations of Gay and Claypole on the variation in agglutinability caused by cultivating the typhoid bacillus on blood agar A typhoid bacillus showing irregularity in fermentation, agglutination and indol production is described

72 **Cultural Variations in Pneumococcus**—Stryker's work shows that the growth of virulent pneumococci in homologous immune serum produces (*a*) variations in agglutinability, (*b*) decrease in virulence, (*c*) inhibition of capsule formation, (*d*) increase in phagocytability with normal serum, and (*e*) change in absorption power and antigenic properties Reversion to the original type in these changed forms takes place on animal passage

73 **Immunity Produced by Instillation of Horse Serum**—Sewall and Powell deduce from their observations that the peculiar value of rest in the treatment of infection depends on the fact that absorption of minimal amounts of toxic matter produces a positive protective reaction in the organism, while the absorption of larger amounts renders the cells hypersensitive The biologic response to the intoxication is probably chiefly determined within the first forty-eight hours of absorption and therefore rest at the beginning of an infective process has preponderant prophylactic value

Journal-Lancet, Minneapolis

July 1 XXXVI No 13 pp 371 401

75 Classification and Treatment of Nephritides M H Fischer, Cincinnati
76 Medicine and State C Williams St Paul
77 Visit to Mayo Clinic J E Moore Minneapolis
78 Rupture of Bladder Report of Two Cases E P Quain Bismarck N D
79 Prevention and Treatment of Tetanus H E Robertson Minneapolis

Laryngoscope, St. Louis

June XXVI No 6 pp 937 1000

80 *Treatment of Hay Fever H Wilson Detroit
81 Streptococcus Mucosus Capsulatus Infection of Mastoid Bone Report of Case R L. Loughran, New York
82 Catarrhal Deafness with Suggestions as to Treatment W E Dixon Oklahoma City
83 Perforating Wound of Frontal Sinus Resulting in Meningitis and Death Report of Case W W Carter, New York

84 Correction of Depressed Nasal Deformity by Transplantation of Conjoined Bone and Cartilage W W Carter, New York
85 Case of Pemphigus Involving Nose and Throat Due to Streptococcus Hemolyticus Treatment with Autogenous Vaccine W H Haskin, New York
86 Case of Eighth Nerve Neuritis with Interesting Galvanic Findings G W MacKenzie, Philadelphia
87 Case of Curious Nasal Reflex Sneezing and Vomiting Due to Presence of Nasal Spur F Hazlehurst, Jr, Baltimore

80 **Treatment of Hay-Fever**—Twenty-six cases were treated by Wilson with pollen solutions and twenty-two with calcium chlorid He says that the desensitization of hay-fever patients by means of specific pollen solutions will materially relieve a small percentage of them if treatment is begun early enough Pollen solutions for therapeutic use should be prepared and used with great care and understanding When improperly prepared or used, there is danger of serious, if not fatal, reactions Multiple sensitization is a frequent phenomenon in hay-fever subjects, and its existence may account for many failures in the treatment by means of pollen solutions The treatment of hay-fever by means of calcium salts rests largely on empirical observations, but from the limited data at hand, if the doses are sufficiently large, and prolonged through a more or less extended time, a large percentage of patients will receive material benefit It is possible that vernal cases yield more readily than autumnal cases The administration of calcium salts is without danger to the patient and may be undertaken by any intelligent physician It requires neither a careful laboratory technic, nor any special knowledge for its employment

Medical Record, New York

July 8, XC, No 2, pp 47 88

88 Radium Efficiency in Nonmalignant Surgical Conditions R Abbe, New York
89 Radium in Field of Laryngology D B Delavan, New York
90 *Fractures in Children J Grossman, New York
91 Woman's Duty in Antituberculosis Crusade S A Knopf, New York
92 Requirements of Gonococcus for Its Natural and Artificial Growth L D Bristol, University, N D
93 Case of Esophageal Stricture H F Goodwin and C H Keogh, Chicago
94 Case of Adiposis Dolorosa C M Nice, Birmingham, Ala

90 **Fractures in Children**—Grossman's paper is based on the study of 200 cases of fractures, divided as follows Fracture of the clavicle, 50 Fracture of the humerus, 48 (*a*) surgical neck, 3, (*b*) shaft, 5, (*c*) lower end, 40 Fractures of the forearm, 92, (*a*) shaft of the radius, 20, (*b*) shaft of the ulna, 5, (*c*) olecranon, 3, (*d*) both bones, 24, (*e*) lower end of the radius, 40 Fractures of the leg, 10 (*a*) tibia, 5, (*b*) fibula, 5 There were 130 in males and 70 in females The ages were between 14 days to 11 years The cause in the majority of the cases was a direct injury

Missouri State Medical Association Journal, St Louis

July XIII, No 7, pp 305 368

95 Plea for Merit System and Civil Service in Eleemosynary Institutions C R Woodson, St Joseph
96 Diabetes Insipidus G Richter, St Louis
97 Sleep and Its Disorders G W Robinson, Kansas City
98 Experiences in Canal Zone with Special Reference to Malaria and Leprosy A M Napier, St Louis
99 Syphilis of Circulatory System O O Smith, St Louis
100 Two Cases of Influenzal Meningitis E E Moody, Joplin
101 Case History of Beginning Tabes E G Mark and H E McCarthy, Kansas City

New Jersey Medical Society Journal, Orange

June XIII No 6 pp 259 338

102 *Abderhalden Reaction in Mental Diseases H A Cotton, E P C White and W W Stevenson, Trenton
103 Anthrax A S Ross, Camden
104 Reminiscences of Some of Older Physicians D St John, Hackensack
105 Reminiscences of Atlantic County Physicians P Marvel, Atlantic City
106 Reminiscences of Cumberland County Physicians T J Smith, Bridgeton
107 Reminiscences of Members of Passaic County Medical Society W B Johnson, Paterson
108 Sketch of Hudson County's Medical Past F D Gray, Jersey City
109 Brief History of State Hospital at Trenton H A Cotton, Trenton
110 Brief History of State Hospital at Morris Plains E M Fisher, Morris Plains
111 Brief History of New Jersey Sanatorium for Tuberculous Diseases S B English, Glen Garden

102 **Abderhalden Reaction in Mental Diseases**—The Abderhalden test was studied by the authors in 289 cases, including the various psychoses and some normal individuals The results were practically negative except in dementia praecox and epilepsy In dementia praecox 81 per cent of the cases showed a positive reaction to sex gland and in three cases out of fifty-five gave a positive reaction to the thyroid and sex, two of these were the catatonic type Differential count of the blood shows rather characteristic conditions in dementia praecox, namely, high red blood cells, very low white cells and high lymphocyte count and low polymorphonuclear In epilepsy practically all cases, sixty-nine, gave a positive reaction to suprarenal gland

New Mexico Medical Journal, Las Cruces

June, XVI No 3, pp 69 101

112 Obstetric Anesthesia and Analgesia E F Frisbie, Albuquerque
113 Interpretation of Cardiac Irregularity C E Edson, Denver
114 Effect of Trauma on Development of Cranial Bones, Report of Case E P Palmer, Phoenix

Pennsylvania Medical Journal, Athens

June, XIX No 9 pp 647 724

115 *Pyelitis F E Ross, Erie
116 Thyroid Therapy W H Good, Philadelphia
117 Treatment of Exophthalmic Goiter by Means of Roentgen Rays G E Pfahler and J D Zulick, Philadelphia
118 Hyperphoria and Its Management W W Blair, Pittsburgh
119 Role of Rhinologist in Hypophysial Surgery L H Landon, Philadelphia
120 Luzerne County Medical Society and Its New Building L H Taylor, Wilkes Barre
121 Our Medical Home C W Bachman, Reading
122 Constitutional Effects of Surgical Focal Infections E LaPlace, Philadelphia
123 Methods and Results of First Aid as Established by Pittsburgh and Lake Erie Railroad Company J D Milligan, Pittsburgh

115 Abstracted in The Journal, Oct 30, 1915, p 1578

South Carolina Medical Association Journal, Greenville

June XII, No 6 pp 159 191

124 Refractive Errors M Crook, Spartanburg
125 Anatomy, Physiology and Pathology of Large Intestine, with Some Observations on Radical Operation for Colonic Tumors W J Mayo, Rochester, Minn
126 Preventive Medicine as Applied to Chronic Pyogenic Infections J H Gibbes, Columbia
127 Treatment of Diabetes Mellitus W H Powe, Greenville
128 Heat in Inoperable Uterine Cancer A E Baker, Charleston
129 Practical Suggestions in Infant Feeding for General Practitioner W P Cornell, Charleston

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FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

June 17, I, No 2894, pp 841 872

1 *Fasting Treatment of Diabetes E I Spriggs
2 *Simple System of Skeleton Splinting C M Page
3 Cage Splint for Fractures of Humerus E M Cowell
4 *Inhibitory Action of Saliva on Growth of Meningococcus M H Gordon
5 Behavior of Hypochlorites on Intravenous Injection and Their Action on Blood Serum H D Dakin

1 **Diabetes Treated by Fasting**—Eight cases are cited by Spriggs Fasting, up to several days, was well borne by cases of mild and severe diabetes of ages ranging from 24 to 79 The urine was made free from sugar, the blood sugar was reduced and acidosis greatly diminished All the patients felt better for the fast In most cases the food could be increased gradually, without glycosuria, until a more liberal diet was being taken than before treatment The rapid abolition of sugar had an excellent mental effect It shortened tedious treatment, and enabled more time to be given to finding out what food should be taken and in what quantity Spriggs emphasizes the fact that the gradual

increase of food after the fast calls for skilled dietetic arrangements and careful daily attention It is not so easy as an ordinary strict diabetic diet It is useless, however, except in the mildest cases, to increase the food quickly after the fast, as sugar returns at once During the gradual increase of food the patient is undernourished In severe cases courage and endurance are called for on his part, as it may be necessary to keep him so short of food that he is inefficient Regular estimation of the blood sugar should be made In some cases of diabetes as good an effect may be attained, though much more slowly, without fasting and subnutrition with its risk of depression and weakness, provided the patient is willing to keep permanently to the diet which has been found by careful testing to be suitable to his case

2 **Simple System of Splinting Skeleton** —The stock material used by Page consists of 5-foot lengths of annealed mild steel one-half inch by one-eighth inch of standard type The strips are drilled throughout their length at 1 inch intervals with holes of one-eighth inch diameter Split steel rivets five-eighths inch by one-eighth inch are required to couple the various lengths after they have been bent to form the splint required

4 **Antimeningococcal Action of Saliva** —The experiments reported by Gordon show that normal saliva inhibits growth of the meningococcus on solid artificial culture medium and that saliva from carriers has a similar action Nasal mucus from normal persons has no such inhibitory effect on the growth of meningococcus A quantitative experiment showed that fresh saliva does not entirely lose this inhibitory influence when diluted a hundred fold So pronounced is the antagonism of saliva to growth of the meningococcus in culture, that in a given experiment a volume of broth suspension containing living meningococci at the rate approximately of 1 000 million per c.cm was prevented from growing by admixture with an equal volume of fresh saliva This antimeningococcal action of saliva is due to its living bacteria The inhibitory action of saliva appears to be chiefly due to mixed salivary streptococci Pure cultures of the predominant streptococci, when tested individually, were found to exert comparatively slight inhibitory influence on the growth of meningococcus These observations demonstrate the practical importance of avoiding contamination with saliva when swabbing the nasopharynx of suspected carriers of the meningococcus

Journal of Tropical Medicine and Hygiene, London

June 15 XIX No 12 pp 141 152

6 *Hunger Swelling in Poland B Budzynski and K Chelchowski
7 Culex Pipiens Breeding Sixty Six Feet Below Ground M E MacGregor
8 *New Human Intestinal Flagellate in Anglo Egyptian Sudan A J Chalmers and W Pekkola

6 **Hunger Swelling in Poland** —This is an abstract of a paper read at the Medical Society at Sosnowiec, in Poland, in July, 1915 It describes a series of 110 cases of a peculiar affection occurring among the inhabitants of certain towns in Poland as a result of the insufficiency and inadequacy of food following German occupation The name "hunger swelling has been applied to it The most characteristic symptoms of this disease of malnutrition were edema, debility and muscular weakness intestinal disorders, mental depression, dimness of vision, disappearance of sexual impulses, and alterations in the blood and urine The edema resembled that met with in kidney disease, although, as a rule, it began in the lower extremities It might be confined to the lower limbs, but more often spread over the whole body, involving the face, and especially the eyelids, in cases in which it might be so great as to interfere with vision It sometimes led to bursting of the skin with serous exudation, and so stretched the skin that pink scars like striae gravidarum resulted from it The swollen extremities usually felt cold to the patient and were cold to the touch, and the swollen skin was definitely painful when pinched up between the fingers After one or two weeks in the hospital the edema might disappear, on the other hand, it might persist for months, and even recur after it had subsided It usually disappeared from above downward, the last place for it to go being the feet With the disappearance of the edema marked wasting was evident, the patients sometimes being reduced to mere "skin and bone" The wasting was usually associated with incontinence of both urine and feces

The skin was as a rule, dry and painful The mental faculties were as a rule, distinctly lowered An almost constant symptom was hemeralopia, or day blindness The most marked alteration in the blood consisted in a reduction in the percentage of hemoglobin (about 50 per cent), and a corresponding reduction in the color index There was a diminution in the number of red blood corpuscles, and a definite increase in the number of white blood corpuscles The urine was pale like water, usually alkaline, and contained neither albumin nor sugar The amount of urine passed per diem varied greatly, but on the whole was increased sometimes reaching 60 ounces and over even when the swelling was disappearing In mild cases, under the influence of a more generous dietary, recovery took place, in severe cases the disease was liable to go on to a fatal issue, and eight out of 110 patients died

8 **Human Intestinal Flagellate** —The authors name this organism *Octomitus hominis* Chalmers and Pekkola, 1916, and define it as follows "Flagellate nonameboid organism measuring about 6 by 3 microns and possessing six anteriorly directed flagella of variable size and sometimes of considerable length springing from a single or double well-marked blepharoplast situated close to the anterior margin Nucleus, single roundish often homogeneous with well marked membrane and sometimes with a karyosome, and situated at some distance from the anterior extremity Two axostyles are present arising from the blepharoplast and ending near the posterior margin in two small chromatic particles (axoplasts) from which arise the posterior flagella Periplast thin without markings cytostome absent, cytoplasm with vacuoles but not swollen out with gelatinous material and not possessing chromatophores Known habitat Intestine of man in Anglo-Egyptian Sudan"

Lancet, London

June 17 I No 4842 pp 1203 1244

9 Treatment of Infected Wounds by Physiologic Methods A E Wright
10 Etiology of Shell Shock H Wiltshire
11 Failure of Right Side of Heart as Result of Extensive Pulmonary Disease F J Poynton
12 Effect of Ferrivine and Intramine on Syphilis L W Harrison and C H Mills
13 Case of Erb Duchenne Paralysis Due to Bullet Wound of Fifth Cervical Nerve G L Preston
14 Diagnosis of Dextrosuria and Pseudolevulosuria P J Cammidge
15 Gunshot Wound of Right Orbit and Maxilla W J Collins
16 Two Cases of Strangulated Umbilical Hernia F L H Brown and E W G Masterman
17 Case of Tendon Transplantation for Wrist Drop A K Henry

Annales de Médecine, Paris

May June III No 3 pp 193 322

18 Psammoma Developing on Meninges Below the Thalamus in Woman of Fifty Seven (Sur les tumeurs de la region hypothalamique du cerveau intermediaire) S Livierato and G F Cosmettatos
19 Agglutination in Typhoid and Paratyphoid Fevers (Les reactions agglutinantes dans les infections typhoidiques et paratyphoidiques Etude comparee des indications fournies par l hemoculture et le serodiagnostic) A Cade and E Vaucher
20 Primary Tumors of the Pleura Three Cases E Pallasse and C Roubier
21 Reflex Paralysis and Reflex Trophic Disturbances Consecutive to Wounds of the Limbs (Paralysies reflexes et troubles trophiques reflexes consecutifs aux blessures des extremites Contribution a l etude des nevralgies et nevrites ascendantes ') H Gougerot and A Charpentier
22 *Role of Infection in War Nephritis P Ameuille

22 **Infectious Factor in Nephritis in Troops on Active Service** —Ameuille describes ten cases of acute nephritis in men on active service in which an infectious factor seemed probable but could not be definitely determined The findings post mortem in the kidneys and certain features of the clinical course testified to an infectious process In one case the nephritis developed during a latent phase of meningococcus infection Only in one of the other cases were the blood findings and seroreaction positive Paratyphoid B

bacilli were found in this case These negative findings suggest the possibility that the nephritis may be the work of some new infectious germs for which the trench digging and trench life may be responsible Germs that have never before been brought in contact with human organisms may have been unearthed by the trench excavations This suggestion is reenforced, he remarks, by the fact that the sappers of the engineering corps formed 7 5 per cent of the nephritis cases, a relatively enormous proportion Certain other new infectious diseases have developed in trench life, as for example that curious trench fever which affected the British troops in Flanders and which seems to be the work of a virus living in the blood The men affected came from different corps, so there was nothing to suggest an epidemic character During one fortnight three cases of acute nephritis developed in one regiment but the men were in different battalions and the methods of relieving service in that sector made it almost impossible that there could have been any contact between these men The next question is whether it is a unique and specific infection with an affinity for the kidneys, or whether there are various infections which may any or all of them strike at the kidneys as the point of least resistance on account of the local predisposition entailed by the stress of the campaign

Archives des Maladies du Cœur, etc, Paris

June IX No 6 pp 237 284

23 *Case of Mitral Stenosis with Patent Foramen of Botallo (De la stenose mitrale avec communication interauriculaire) R Lutembacher

23 **Communication Between the Auricles with Mitral Stenosis**—The persistence of the foramen of Botallo nullified to a certain extent the injurious influence of the mitral stenosis in a case reported, as also in a number on record Notwithstanding the extreme stenosis of the mitral valve, the woman lived to be 61, passing through seven pregnancies Not until the last few years were there any signs of heart trouble Firket has reported a similar case, the woman living to 74 and passing through eleven pregnancies This tolerance cannot be counted on, however, Moureyre's patient died at 25 and Dufour and Huber's at 26 Most writers regard the coexistence of the two anomalies as a fortunate coincidence, but Lutembacher thinks there is a certain relation between the two congenital lesions, the mitral stenosis causes so much pressure in the left auricle that the opening in the septum gets no chance to close up

Bulletin de l'Académie de Médecine, Paris

June 6 LXXV No 23 pp 671 696

24 *Syphilis as a Factor in Appendicitis (L'origine syphilitique de l'appendicite) Gaucher

25 Medicosurgical Control of Soldiers and the Soldier's Rights as an Individual (Chloroformisation obligatoire dans le service militaire pour le diagnostic ou la therapeutique sans operation sanglante) M Reynier See Paris Letter, p 217

26 *Whooping Cough in Adults (Sur l'epidemie actuelle de coqueluche et sur la frequence anormale de cette maladie chez l'adulte) P Tissier

27 *Juvenile Delinquency and Prophylaxis (L'enfance delinquante Etude medico legale) A Collin

24 **Syphilis as a Factor in Appendicitis**—Gaucher replies to his critics (see abstract 40, p 155), that in a recent series of thirty-three operative cases of appendicitis, the Wassermann reaction was positive in 43 per cent Syphilis, inherited or acquired, is often responsible for a subinflammatory lesion in the appendix on which acute appendicitis is particularly liable to develop In one family one child has had enterocolitis, the other appendicitis The father has never contracted syphilis, but the Wassermann reaction is positive in him and also in the two children, but negative in the mother The syphilis traces back to the paternal grandfather, who is known to have had the disease In conclusion he remarks that physicians in particular shrink from accepting his statements, as "too many physicians and physicians' children have been operated on for appendicitis, because medicine is one of the professions which furnishes the largest contingent to syphilis"

26 **Prevalence of Whooping Cough at Paris**—Tissier calls attention to the 18, 19 and 25 deaths from whooping cough at Paris during three weeks in April, and to the increasing prevalence of the disease since then Among the 37 cases he encountered in the early spring, 25 were in adults, and of the 76 cases during April and May, 47 were in adults In every instance the adults had the disease first, and the children contracted it later from them The disease was diagnosed in the adults at first as grippe, nervous cough, tonsil cough, etc, and the persons affected kept at their work, thus spreading contagion The true nature soon became evident by the developing of typical pertussis in the children of the family, by the inefficacy of treatment as for grippe, etc, and by the benefit from treatment for pertussis For this he uses iodoform, chloroform and bromoform Applied early, the pertussis rapidly yields to treatment and bronchopulmonary complications are warded off, he states

27 **Juvenile Delinquents**—Collin has examined large numbers of delinquent minors He found that about 10 per cent were grossly abnormal, epileptics, perverts, etc, while about 30 per cent were normal and owed their delinquency to their environment About 60 per cent were abnormal from the physician's standpoint Some of them showed signs of an inherited toxic-infectious taint which had interfered with their normal development in early infancy Those in this group require treatment These same influences affected the children in another group but did not entail anomalies in physical development There is not much chance for improvement by therapeutic measures in this group In another group there were mental and physical signs of injury from some infectious disease in early childhood The fourth and last group was composed of minors with evidence of gastro-intestinal trouble or tuberculous infiltration Their psychic excitation is closely connected with their organic condition He says in conclusion that it is only thus by studying the past that we can appreciate the present status of the child and estimate the outlook for his future Inversely, every anomaly of development in a child from 1 to 3 years old and every persisting change in the character, at that age, should call and hold the attention of the physician so that rational treatment may be applied while there is still time

Journal de Médecine de Bordeaux

June LXXXVII, No 8 pp 145 164

28 The Neuron in Relation to the Physiology and Pathology of the Peripheral Nerves I A Pitres

29 *Advantages of Systematic Graduated Muscular Work in Treatment of Pulmonary Tuberculosis (Du travail musculaire systematise comme traitement de la tuberculose pulmonaire) H Hamant and C Colbert

30 Anticholera Vaccination at Saloniki (Sur la vaccination anticholerique) L Verdelet

29 **Work in Systematic Treatment of Pulmonary Tuberculosis**—Hamant and Colberg describe the results obtained at the Hauteville sanatorium during 1914 with the systematic application of the principle of intermittent auto-inoculation by means of graduated muscular exercise The patients were all men, and the complete course took six weeks at least The first grade of the course, after a two-weeks' rest, was a daily walk The last grade included road-making with shovel or pickaxe, supplemented by a gentler exercise with outdoor bowling The work is graduated according to the answer to the question, "Is the exacerbation approaching its close or is it terminated?" Any developing poussee is a contraindication to exercise The thermometer is the principal criterion, but this alone is not enough The physiologic condition as a whole must be regarded, and the debilitated with unstable heart action, should be excluded from this method of treatment Patterson is guided by the temperature, the quantity and quality of the expectoration, the weight, fluctuations in the appetite, subjective sensations of the worker, and the opsonic index Dumarest is guided more by the auscultation findings Headache, anorexia or fever must be regarded as evidence of excessive auto-inoculation and call for a halt at once Actual hemoptysis was never observed and Patterson states that it has never occurred at his sanatorium during this "work cure" The subjective benefit from being allowed to exercise is an important factor in the results Appetite and sleep return Expe

riences at Hauteville indicate that a rise of one degree Centigrade is the limit for a salutary reaction Another law that has been worked out from the experiences reported is that the temperature reaction is not necessarily proportional to the severity of the pulmonary lesions This negative law illustrates the difficulties of the problems that have to be met in carrying out a systematic work cure The physician undertaking it must give his whole time to it, he must live with his patients Without this constant surveillance of the minutest details and at every minute, the method is liable to do harm

Paris Medical

June 7 VI No 25 pp 565 580

31 Contusion of the Hip Joint (La contusion de la hanche) R Gregoire
32 Colloidal Gold as Adjuvant in Treatment of Typhoidal States Barachon
33 *The Medical Group in Parliament and Its Influence (Le groupe medical interparlementaire et nos organismes professionnels) Granjux
34 Operating Room on the Firing Line (De la chirurgie dans les postes chirurgicaux avances) H Costantini
35 Dentistry Service for the Troops (Organisation d un service dentaire dans un regiment d infanterie) Crenier

33 **The Interparliamentary Medical Group**—This is the name assumed by the little company formed of the medical members of the two houses of parliament in France They form a regular organization with president and four secretaries and meet to discuss matters affecting the profession and the public health in general Granjux here relates instances showing that while various medical associations receive but scant attention and courtesy from the powers that be, as a rule, when they depute the "interparliamentary medical group" to be their spokesman, it is quite another story This is a new force which may enhance materially the welfare and prestige of the profession

Presse Medicale, Paris

June 15 XXIV No 34 pp 265 272

36 Typhoid with Superposed Paratyphoid (Les fievres typhoides intriquees) A Chantemesse and A Grimberg
37 Complications in Lungs and Pleura with Extensive Wounds of the Nerves (Sur la frequence des complications pleuro pulmonaires et leur role comme facteur de gravite chez les grands blesses nerveux) G Roussy

Berliner klinische Wochenschrift

March 20 LIII No 12 pp 297 328

38 Improved Technic for Roentgen Work (Die Rontgenstrahlen erzeugung in der neuen gasfreien Rohre und Spezialapparate zu ihrem Betriebe fur Diagnostik und Therapie) K Lasser Concluded in No 13
39 *Isolated Sclerosis of the Pulmonary Artery C Hart
40 *Cystoscopic Control of Radiotherapy of Uterine Cancer (Cystoskopie und Bestrahlungserfolge beim inoperablen Uteruscarcinom) F Heimann
41 Medicomechanical Treatment After Operations for Fracture etc (Die Bewegungstherapie in der Extremitaten Chirurgie die Form ihrer Anwendung ihre Grenzen mit bes Berucksichtigung kriegschirurgischer Tatigkeit) K Muller Concluded
42 Red Rays in Therapy (Die Neon Lampe fur medizinische Zwecke) F Skaupy

39 **Isolated Sclerosis of the Pulmonary Artery**—Hart adds two new cases to the few on record in which the pulmonary artery alone seemed to be the site of sclerosis These patients are usually young and without pathologic antecedents When older persons present sclerosis of the pulmonary artery there are usually signs of more or less lung trouble or trauma of the chest The two cases he reports were like the five published by Romberg and others in which young men or women developed symptoms suggesting mitral insufficiency but necropsy revealed that the valves were intact and that the hypertrophy of the right ventricle was secondary to sclerosis of the pulmonary artery In one of the cases on record there was a history of excessive beer drinking In the two new cases, the left ventricle was small and atrophied as if it had not been receiving enough blood to keep it in tone The only plausible assumption to explain the trouble is a congenital faulty constitution of the pulmonary artery, accompanied possibly by unusual narrowness of the pulmonary veins The latter was pronounced likewise in some of the cases on record This starts a vicious circle which explains the symptoms and the course.

40 **Cystoscopic Control of Uterine Cancer**—Heimann's experience has confirmed the importance of the information to be derived from the aspect of the bladder and tests of kidney functioning as to whether a cancer in the uterus is still operable, and likewise as to conditions after an operation The cystoscope also tells whether it is necessary to sacrifice a fragment from the bladder in eradicating the malignant disease He has been making a special study of the cystoscopic findings with inoperable uterine cancer, following them through their course, and gives the details of six cases of inoperable cancer given systematic Roentgen treatment, thus enabling conclusions to be drawn as to the effect of the radiotherapy Retrogression of edema of the bladder wall and of bullous edema was frequently observed, and this indicated profound modification in the circulation throughout the region under the influence of the exposures The palpation findings and the cystoscope findings showed parallel ups and downs at times, but not invariably On the whole Heimann advocates cystoscopic control of uterine cancer as extremely instructive and reliable

Correspondenz-Blatt fur Schweizer Aerzte, Basel

June 17 XLVI No 25 pp 769 800

43 Importance of Partial Antigens in Treatment of Tuberculosis (Partialantigene und Tuberkuloseforschung) W Müller
44 Arrhythmia (Klinisches uber die unregelmassige Herztatigkeit) H Kyser Continued

Gazzetta degli Ospedali e delle Cliniche, Milan

June 8 XXXVII No 46 pp 721 736

45 Antitetanus Serum Plus Intravenous Phenol Solution in Treatment of Tetanus, Three Cases (Alcuni casi di tetano trattati con la cura mista) G Orrano

Policlinico, Rome

June 11 XXIII No 24 pp 741 772

46 *Casein Test for Pancreas Functioning (Sulla misura della digestione triptica della caseina col metodo di Sorensen) G Izar
47 Aneurysm of Femoral Artery and Vein (Intorno a 2 casi di aneurisma arterio venoso della femorale) C Bacci and G Cavina

46 **Casein Test for Pancreas Functioning**—Izar refers to Sorensen's casein technic by which the proportion of trypsin present is determined by the degree of acidity developing when the casein has been subjected to the action of the ferment and has then been treated with formaldehyd and phenolphthalein He regards this technic as accurate and reliable but describes a slight modification which avoids certain sources of error Three tables are given of the findings with parallel tests

Brazil-Medico, Rio de Janeiro

May 6 XXX No 19 pp 145 152

48 *Operative Cure of Syphiloma of the Rectum (Um caso de syphiloma do recto curado pela rectotomia) C Werneck

May 13 No 20 pp 153 160

49 *Abdominal Pain in Women II (Semiologia da dor abdominal direita na mulher) R Vaz

May 20 No 21 pp 161 168

50 The Work of the Medical School Inspector (Inspecção medica das escolas) O Clark

48 **Operative Treatment of Syphiloma of the Rectum**—Werneck has seen many cases of syphilitic affections in bones and organs absolutely rebellious to medical measures, but in which resection was followed by a complete cure and healing was soon complete He pleads therefore to resort to the knife as a routine measure, without wasting too much time on drugs alone Among the typical cases cited is that of an ulcerating gumma in the trochanter region, one of the sternum and others in bone or testicles These experiences convinced him of the necessity for combining operative and medicinal measures Each case of course has its individual indications, but the old teaching that syphilitic lesions should not be given surgical treatment is entirely too sweeping In a recent case an ulcerating syphilitic tumor on the rear wall of the rectum showed no benefit from medical measures and the cachexia suggested cancer while the pains required morphin four or five times a day The Wassermann was negative and the microscopic findings showed merely an inflammatory process An iliac anus was provided and the

lesion resected, with the result of a speedy and complete cure, the natural anus functioning perfectly

49 **Abdominal Pain in Women**—The first part of Vaz' article was reviewed in Abstract 85, p 82 He here gives illustrations of the attitudes typical with abdominal pain from different causes He warns that in examining for tender points the pressure should be applied gently at first and gradually increased Disease of the bile apparatus usually induces pain in the upper portion of the right abdominal zone It is more or less continuous when the liver is involved, aggravated by pressure and by breathing movements He cites the special points where pain may be expected with gallstones With perihepatitis without effusion the pain in the hypochondrium is usually intense and lancinating, accompanied by fremitus like that of pericarditis With suppurating perihepatitis, the radiation of the pain upward and downward may aid in locating the pus collection, whether it is on the front or upper part of the liver or on its lower aspect Certain forms of liver disease may develop without appreciable pain, especially biliary cirrhosis, cancer and actinomycosis

Siglo Medico, Madrid

June 10, LXIII, No 3,261, pp 369 384

51 Electric Treatment of Obesity (El metodo Bergonie como tratamiento de la obesidad) B N Canovas
52 *Suppuration in Permeable Urachus (Un caso de permeabilidad del uraco) P Cifuentes
53 The War and Insanity (Influencia de la guerra sobre la locura) A Sanchez Herrero

52 **Permeability of the Urachus**—Cifuentes' patient was a man of 58 who for the last three years had had disturbances in micturition, attacks of excessively frequent desires to urinate coming on every two or three months and lasting for six or eight days Finally the umbilicus region protruded and became inflamed, and pus and urine escaped at this point The fistula persisted unmodified by treatment, and an induration could be felt extending from the umbilicus to the bladder This was the urachus, which was evidently the site of a phlegmonous process The urachus was resected entirely, through the peritoneum, as soon as the general health had improved after the clearing out of the phlegmonous cavity Peritonitis soon developed, rapidly fatal

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

June 3, I No 23, pp 2013 2108

54 *Mortality from Tuberculosis at Rotterdam (Sterfte aan tuberculose te Rotterdam over de jaren 1902 tot 1914) J Sanders
55 Psychic Factors in the Practice of Medicine (Het psychische in de geneeskunde) J van der Torren
56 *Essential Edema (Elephantiasis nostras) C D Cramer and C J C Van Hoogenhuyze

June 10, No 24, pp 2157 2236

57 *Autogenous Vaccines (Over de behandeling van verschillende ziekten met auto vaccins) J Hekman
58 *Heart Block in Children (Hartblok bij kinderen) E S Frank and J B Polak
59 Dual Perception of Sensation (Een dubbele vertegenwoordiging van het gevoel op de schors der menscheilijke groote hersenen) C T van Valkenburg
60 *Suggestions for Improved Technic for Prophylaxis of Transmissible Diseases (Is het noodig, dat er, vooral met oog op de febris typhoidea, andere bepalingen worden gemaakt in de wet op de besmettelijke ziekten?) J G A Honig
61 *Simple and Effectual Surgical Treatment of Dysmenorrhea (Splitting van den baarmoederhals bij dysmenorrhoe) P C T Lens

54 **Mortality from Tuberculosis in Holland**—The figures cited are from Rotterdam and Amsterdam during the twelve years ending with 1914 They show a reduction of 19 per cent in the death rate for women, but this is slight in comparison to the reduction of 48 per cent in the death rate for men of the corresponding age, between 20 and 50 This great reduction is the expression in figures mainly of the consequences of improved hygiene in work shops, etc, introduced of late years by private initiative or legislation Improved and extended facilities for systematic treatment have cooperated in the general reduction in the death rate from tuberculosis, but hygiene in the trades has undoubtedly been the main factor The decline has been for males of all ages from 210 1 per 100,000 living to 143 3 and for females of all ages, from 176 9 to 137 2

56 **Essential Edema**—A woman of 27 developed fleeting recurrent edema of the face for which no explanation could be found, the heart, kidneys and blood picture being apparently normal, the Wassermann test negative The edema gradually extended to involve nearly the entire body, and became chronic Diuresis was scanty, but there was no albuminuria The woman had never left Holland and nothing to suggest filaria was found After a period of rigors and fever, death ensued about six months after the first symptoms By exclusion, the retrospective diagnosis was some affection of the lymph glands with a change in the composition of the lymph itself As all other measures had proved ineffectual, thyroid and ovary treatment was given a trial toward the last, but no benefit was apparent The assumption of a primary lymph gland affection, with the lymph becoming less fluid, seems to explain all the symptoms, including the appearance of the edema first at the points where the tissues are less compact Comparatively little fluid escaped when incisions were made to relieve the extreme tension of the swollen legs, and the fluid coagulated in a few minutes Conditions thus were evidently quite different from those with ordinary edema Menstruation kept normal throughout

57 **Autovaccine Therapy** — Hekman applied autogenous vaccines in treatment of various affections, at the general hospital in his charge, as he relates in detail Colon bacillus infection of the bladder and kidney pelvis showed scarcely any influence from the vaccine therapy, but a favorable influence was manifest in the cases of more or less localized staphylococcus and streptococcus infection The results in these cases of bacteremia also justify further trials of the method Not the slightest influence was apparent in the cases of secondary infection with pulmonary tuberculosis

58 **Heart Block in Children**—Frank and Polak compare a case of heart block in a girl of 2½ with analogous cases in the literature They do not regard the prognosis in this case as necessarily unfavorable It is already evident that the organism is adapting itself admirably to the new conditions Earlier in life the child had been examined by physicians and nothing abnormal noted in heart or lungs thus excluding congenital heart block The symptoms of heart block were noticed while the child was under medical care on account of fever of unknown cause for a few days There was no cyanosis, but a tendency to dyspnea and small weak pulse of 48 The heart was enlarged and the heart sounds were synchronous with the pulse The auricle beat was 107 a minute, the ventricle beat 42 8 The tracings show this interfering rhythm Digitalis retarded slightly the auricle rhythm, but displayed no action on the disturbance in conduction They know of another case of heart block of several years' standing which does not prevent the young man from being a creditable football player and good student

60 **Prophylaxis of Epidemic Typhoid**—Honig relates some instances of the spread of typhoid infection which might have been prevented if the members of the family and others who had been in contact with the sick had been kept under medical surveillance during a possible incubation period and examined for carriers He declares that this should not be left to the complaisance of the public, the physician should be empowered by law to enforce this control

61 **Dysmenorrhea**—Lens has noticed that in many cases of severe dysmenorrhea the uterus is in slight anteversion With the menstrual congestion, some of the vessels become kinked, and the resulting disturbances are the cause of the pains He has remedied this completely in a few cases by cutting a slit with sharp scissors in the rear wall of the uterine cervix on the median line The slit is drawn open to form a V by traction from forceps on each side, and a roll of medicated gauze is left in the slit for four days No possible harm can be done by this trifling operation, while it has cured at one stroke agonizing dysmenorrhea rebellious to all other measures There need be no fear, he adds, of disturbance from the small cicatrix at a future pregnancy

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THE CARE OF CHILDREN'S TEETH

THE MOST NEGLECTED FEATURE OF PEDIATRIC MEDICINE *

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Modern medicine concerns itself very largely with the prevention of disease and deformity, and nowhere is there wider or more effective application of the principles of preventive practice than in childhood Only in this period of life can developmental defects be successfully dealt with, and during this time occurs the greatest incidence of those diseases and infectious conditions which so largely determine the disabilities and deformities of later life

Tuberculosis, it is now generally recognized, is essentially, at least in its inception, a disease of early life Measles, scarlet fever, diphtheria and poliomyelitis, and adenoid, tonsil and dental infections, to which may be ascribed so many of the cardiovascular, renal, articular, nervous and other disorders of later years, all occur chiefly in childhood, and methods of control, if they are to avail anything, must be applied then

Preventive medicine, then, it may fairly be said, is of prime importance to the pediatrician Prophylactic measures not instituted in childhood are, in the majority of cases, too late

In many respects the problems of preventive medicine in childhood are well formulated and intelligently appreciated, though in most localities the machinery to cope with them is still inadequate

The problem of the care of the teeth, however, remains very generally neglected Several of our larger cities have splendid systems of dental clinics, and more or less dental inspection is carried on in the schools of even many of the smaller communities, but in most places nothing is being done Indifference to the subject pervades both the medical and dental professions Many members of the latter, indeed, seem wofully ignorant of the importance of the conservation of children's teeth, and so commonly do dentists refuse to accept children as patients that there is often great difficulty in having necessary work done It has been my frequent experience, in trying to save the deciduous premolars or even the first permanent molar, to have dentists decline to undertake the work on the ground that it was not worth while Doubtless most children are difficult and trying dental patients, and perhaps few dentists possess the tact, patience, sympathy and insight into child nature essential to him who would successfully deal with them, but I believe that ignorance is the chief obstacle "The deciduous teeth are only intended to last a few years anyway and then be replaced, and what matters it if through early decay they are prematurely lost? Fillings to preserve them would fall out in a short time and have to be done over, so why bother with them? The permanent teeth will be crooked, of course, but then, they might be so anyway, and they can be straightened later if desired " Thus the voice of ignorance, and it doubtless salves many a conscience that should feel guilty

For the purpose of our discussion we may consider the teeth in relation to developmental, nutritional and infectious disorders associated with them

The most important developmental defects involve the bones of the jaws and face primarily, and are manifested by disturbances of dental structure, alinement and occlusal relations commonly leading to more or less interference with the functions of mastication, respiration and speech, and alterations in the esthetic appearance of the dental arches and facial expression This syndrome is included, by the dental profession, in the term "malocclusion " The causes of malocclusion may originate in fetal life, dating back to the period of the differentiation of the dental lamina and tooth germs, or even beyond, and the bony deformities may, in some cases, be recognized before the eruption of the teeth and may vary from complete absence of certain bones, and defects such as cleft palate, to merely insignificant changes in relationships

In other instances, a normal deciduous dentition may be ruined by neglect or misuse Neglect of oral hygiene leads to early caries and loss of teeth, with consequent shrinkage and abnormalities of growth of the jaws, which force the oncoming permanent teeth out of their natural positions Similar effects may follow misuse, which implies the failure to utilize the masticatory function of the teeth, and may be caused by an improper dietary, or by bad habits, such as bolting the food, or chewing on one side, or with the front teeth only, which may cause relatively disproportionate growth of different parts of the jaws, or caries or other painful conditions of the mouth and teeth may prevent proper mastication Nasal deformities, adenoids and hypertrophied tonsils may induce changes in the normal palatal arch and dental alinement, and certain systemic disorders, as syphilis, rickets and malnutrition may profoundly affect the development of the jaws and teeth, as may also disorders of the endocrine organs, as dyspituitarism

A correlation between dental malformations and certain other developmental defects has also been commonly observed Deformities of the palate and dental arches are almost invariably found in the mentally defective, while cretins quite constantly exhibit irregu-

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* Chairman's address read before the Section on Diseases of Children at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

larities and abnormalities in the position, structure, eruption and shedding of the teeth. The deciduous teeth, for instance, may be retained to adult life, coexisting with the permanent teeth.

The development relationships between the jaws and other bones of the face are strikingly shown by the marvelous development of this region which occurs in the first two years of life, more marked than in any other part of the body. It is a favorite saying that "Beauty is skin deep", but how false this is. Beauty, as applied to human beings, ordinarily refers to the aspect of the face, and here beauty is "bone deep." No matter how fine the complexion or texture of the skin, there is no beauty in overshot jaws, receding chins and crooked teeth, or in the vacuous expression of the habitual mouth breather. As we give so much thought to our personal appearance, and as we are so much judged by our appearance, and the impressions we create are to such an extent dependent on it, how important it is, then, that parents should very early be properly advised as to the care of their children's mouths, in relation to the development of their faces.

That malocclusion of the teeth may seriously interfere with one's esthetic appearance and with mastication, and even with speech, is evident even to the laity.

Respiratory disturbances result chiefly from encroachment of the narrowed high-arched palatal structures on the nasal cavity. The nasal passages are contracted, bowing of the septum still further reduces the air-space, and adenoid and tonsillar hypertrophy are usually associated. There occur then the manifestations of mental and physical impairment related to obstruction of nasal breathing, which, because of their notoriety, need not be discussed in detail here.

Nutritional disturbances associated with abnormal buccal conditions are common. The mouth is one of the important organs of digestion. Mastication of the food is an essential prelude to the processes which are to follow, and in respect to starchy foods, a considerable proportion of the digestive process should normally occur in the mouth. That a diseased organ cannot functionate normally is axiomatic. Moreover, digestive processes not properly instituted cannot be completed without entailing on other organs demands beyond their normal capacity. Thus children with bad teeth have commonly disturbances of other digestive organs, and impaired nutrition, which is of course accentuated by the associated toxemia due to absorption of bacterial products from the mouth. The swallowing of these, also, no doubt, plays a part in the derangement of gastric and intestinal digestion.

A proper selection of the dietary in young children is of much significance in the development of sound and normal teeth, but another member of the section is to discuss this phase of the subject, and I will not trespass on his topic.

Infections of the teeth and alveolar processes afford two of the commonest diseases to which man is subject, dental caries and pyorrhea. Interest in caries dates back to early times and it has been ascribed to a great variety of etiologic factors. In Hippocrates' time, disturbance of the humors of the body was assigned as a cause. In the middle ages, the worm theory prevailed. At one time, each tooth was supposed to act as the pole in a galvanic battery and electrical action was thought to account for the dissolution of the tooth. Later on, caries was supposed to be due to the presence in the mouth of abnormal chemical bodies, white decay being attributed to nitric acid, yellow decay to hydrochloric acid, and brown decay to sulphuric acid. With a knowledge of bacteriology came the septic theory, and then the chemicobacterial theory, which is now generally accepted. This theory assumes that certain of the mouth organisms, by the production of enzymes, induce fermentative processes in the carbohydrate food materials in the mouth, with resultant formation of acids, chiefly lactic, which cause dissolution of the inorganic substances in the teeth. Destruction of the harder portions of the tooth structure exposes the pulp to infection, in which may be also involved the peridental soft tissues or even the bone. Some authors have claimed that caries is endogenous rather than exogenous in origin, but this hypothesis finds little support.

Conditions constantly present in the mouth, free exposure to bacteria, and warmth and moisture to facilitate their growth, predispose to germ activity in this region, and liability to caries is enhanced, according to the theory, in the presence of lactic acid forming organisms, by undue retention of carbohydrate materials in proximity to the teeth. This may be due to the form or arrangement of the teeth, pits or crevices in the enamel, recession of the gums, or faulty positions of the teeth in relation to each other or to soft parts, tending to increase the liability to retention of food particles. An arrested or insufficient flow of saliva may also be a factor, but this is rare except during fevers. If prolonged, caries may be greatly aggravated by it. The most important factors, however, are probably the food itself and the dietetic habits of the individual. This cannot be gone into in detail, but in general it may be said that soft foods that require little mastication, which assists in the mechanical cleansing of the teeth, or sweet sticky syrupy foods that so often constitute the last part of a meal, seem to predispose to caries. That mushes, custards, puddings, soft breadstuffs, bread and milk, potatoes, sweets, etc., form a large part of children's diets, is well known.

Dry, fibrous and acid foods, such as dry cereals, fresh vegetables and fruits, on the other hand, seem antagonistic to the development of caries. They are especially valuable, then, particularly if eaten at the close of a meal.

Dietetic habits, such as eating before retiring, or the eating of sweets at bedtime or between meals, or too frequent eating, which leaves a fresh and constantly replenished supply of carbohydrate material in the mouth, or bolting of food, may favor retention of carbohydrates and so predispose to caries.

The relative alkalinity and acidity of the saliva in relation to caries is at present a subject of great interest in the dental profession, largely induced by Pickerill's work, in which he seemed to prove that by varying the stimuli applied to the salivary glands by foods or chemicals taken in the mouth, changes may be brought about in the reaction of the saliva, it being his theory that caries is dependent on acidity of the saliva. Critical review of his methods by other investigators, however, is said to have disclosed certain fallacies, and it would now appear that a tendency to caries depends perhaps not so much on the mere acidity or alkalinity of the saliva, as such, but rather on the difference in reaction between the so-called resting saliva and the saliva activated by the taking of food or chewing. This difference is called the salivary factor.

It is well known that the reaction of a culture medium may ordinarily be altered but little without affecting the growth of organisms in it, slight changes perhaps inhibiting entirely the growth of certain bacteria. It would seem, according to observations on which this theory is founded, that wide variations in the reaction of the resting as compared to the activated saliva favors immunity to caries, by producing conditions unsuitable for the excessive proliferation of acid-forming organisms in the mouth. The influence of foods and chemicals on the process is still unsettled.

Pyorrhea, also, has of late attained a great prominence in medical literature because of the investigations into the causative relationship of the *Endamoeba gingivalis* to this condition, which have aroused considerable interest and some controversy.

We are chiefly concerned, however, with the more general aspects of these very common infectious diseases.

Almost invariably associated with suppurative conditions in the mouth we find infections of the tonsils and other pharyngeal and nasal structures. Sinus disease, middle ear inflammations, inflammatory eye disturbances from direct extension of infection, and toxic changes in the iris, choroid, retina or optic nerve have been frequently reported.

Tubercle bacilli have been isolated from the cavities of carious teeth unassociated with apparent tuberculous disease in the individual other than cervical lymphadenitis, but dental caries so profoundly affects the subject's general nutrition as to constitute a grave predisposing factor in tuberculosis, whether or not we regard the teeth as possible direct portals of infection with the bacillus. Simple and suppurative lymphadenitis resulting from caries is a common phenomenon.

During the last several years, the subject of focal infections has occupied perhaps the foremost place in medical thought. It is unnecessary here to rehearse the many conditions included in the category of infections of buccal origin, because they are familiar to all by reason of the vast literature on focal infection. If it is true, as Billings has said, that, barring skin and venereal disorders, the largest percentage of human diseases have their origin in the mouth and nasopharyngeal area, or if all nontraumatic joint inflammations are evidence of infection elsewhere, most commonly in this same region, it would seem that the importance of my subject can hardly be exaggerated.

What is to be done about it? The problem is appalling by reason of the vastness of the personnel involved and the time required for adequate dental treatment. Every dental patient demands hours of actual work, and by whom and when and where is this to be done? Wise men, leaders of the dental profession all over the country, see the need and are striving to devise means of relief. The medical profession, largely through the impetus of the "focal infection" propaganda, realizes a new significance in decaying teeth and septic mouths. The public is being aroused to the importance of oral hygiene. Philanthropy is interested. The age incidence of many dental defects makes the problem of peculiar concern to the pediatrician. I have therefore ventured to bring the subject to your attention today in the hope of stimulating your further interest in it, and enlisting your aid in helping to promote its consideration in your several communities.

Cooperation between the dental and medical professions must be fostered. Both they and the public must be educated to the need by those who already realize it. The rank and file of the dentists must learn that they are not merely artisans and mechanics, but that they are workers in one of the great fields of medicine, in which they have to do with matters which may determine the whole future health and usefulness of the individual, and that children, instead of being avoided, are to be regarded as their most important patients, because much of their work can be effective only in children.

Parents must be made to appreciate the tremendous importance of conserving the deciduous teeth and of correcting orthodontic defects and deformities early, and those who are able to pay must be taught that the work is worth paying for, that it may be attractive to high-class scientific men and women.

Time does not permit a discussion of details of organization of the forces concerned in the problem. I want to say, however, that a children's clinic which lacks a dental department as an inherent part of its organization is defective.

Federal Realty Building.

THE PROGNOSIS IN INFANTILE PARALYSIS*

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CLEVELAND

Despite the great advances in recent years in our knowledge concerning the etiology and pathology of acute myelo-encephalitis, and notwithstanding the numerous excellent papers recently published on the early treatment of this disease and its effect on the outcome of the paralysis, few diseases of such serious nature are so little understood by the medical profession at large as this one. We have been powerless to prevent the spread of epidemics, unable to make the correct diagnosis until after the advent of a frank paralysis. Treatment both prophylactic and curative has been futile, and the correct outlook as to the future progress of a given case is rarely foretold. Is there any wonder, therefore, that so many patients fall into the hands of quacks and irregular practitioners?

This at least has been the writer's experience in the recent epidemic of infantile paralysis in Ohio. He has seen many patients, improperly managed as to treatment and functional use, grow worse and lose what little muscle strength was left in the afflicted muscle groups, because of the false prognosis as to the duration and the course of the treatment and the final outcome as to function. One has only to consult the recent publications of Lovett and Buchholz to realize the possibilities for partial recovery of function and the tremendous importance of properly graduated muscle treatment and the baneful effects of overstimulation, excessive use and overexertion.

It is of vital importance that the physician in charge in the acute stage of this disease should be conversant with the true course of the recovery of muscle function. In the inability to diagnose and specifically treat the beginning stages of infantile paralysis, very little additional harm is done in the present state of our knowledge, but with a promise of a perfect cure the seed is sown for a lack of appreciation for a good functional recovery, for the lack of necessary endurance and patience on the part of the parents, which results in desperate attempts to force the victim into the evils of overexertion and overstimulation, with its consequent deplorable effects of loss of muscle tone, overstretching and weakening of the afflicted parts. No one feature of the misunderstanding prevalent in the medical profession today concerning this disease is so conducive of harm as is this ignorance concerning the true prognosis.

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* Read before the Section on Orthopedic Surgery at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

Epidemic infantile paralysis is an acute, contagious, infectious disease attended with a high mortality, the rate varying from 9 to 20 per cent. in various epidemics, and in the vast majority of cases the disease occasions permanent muscle damage of greater or lesser extent and renders the victim a "cripple." The grave character of infantile paralysis can be more readily grasped if this disease is contrasted with others concerning whose epidemic seriousness there is no doubt. In typhoid fever the morbidity and mortality are about the same, and the length of the stay in bed is not unlike; but in typhoid the convalescent patient gains rapidly in strength and well being and is soon restored to normal function. In infantile paralysis, convalescence is only the preparation for a long and tedious struggle against crippledom.

The death rate is directly comparable to the severity of the infection. The seat of the lesion also plays a most important part. The upper cervical and cerebellar types, with their paralyses of the muscles of respiration and deglutition, are responsible for the majority of deaths.

Complete recovery from the paralysis is not as frequent as some writers would note. Mark Richardson and Sever state that 25 per cent. of all their patients made a complete recovery. They also note that in half of the recovered cases the onset was mild and the return of complete function occurred rapidly, i. e., in from four to six weeks; but they further state "no one can tell at first which case is going to make such a recovery."

On the other hand, many recent writers, among them O'Reily, Howard and Schouffler, note that "complete recovery occurs but rarely and that there is rarely a case so mild that it can be absolutely cured and allowed to pass out of observation." My own experience in the Ohio epidemic of 1915 gave me only two cases, out of the seventy-eight which I saw personally or which I know of from personal communication with the attending physician, which can be said to have undergone a complete cure. One was a case of left facial paralysis in a child of 3, and the other a marked weakness of the thigh muscles in a child of 6, the attack being so light as to have been entirely overlooked by the attending physician.

When complete recovery takes place spontaneously, it is said that the climax is reached not later than six weeks from the time of onset.

Partial recovery of muscle power with a more or less satisfactory recovery of function is the universal rule. No case is so bad that there is not some opportunity for improvement, and almost all patients with paralysis of the lower extremities can be put on their feet and taught to walk. It has long been taught that, as a rule, the intensity of the paralysis is in proportion to the severity of the attack and that the mildest cases recover easiest, but this rule is not universally true and the physician must be on his guard not to be misled by the seeming insignificance of the primary paralysis, lest the afflicted muscles be allowed to overstretch and become weakened from misuse. I have in mind a case of peroneal palsy so mild that the attending physician, a pediatrist of note, suspected a coxitis on account of the limp. The consulting orthopedist ruled out coxitis, and as the child was evidently suffering from rickets, put the child on antirachitic treatment. Four months later (now in midwinter) when I saw the child again, it showed a tendency toward varus and an evident weakness of the peroneal muscles.

The prognosis for recovery in a given case depends on many factors, most of which represent unknowns, and only one being under the direct control of the physician. These are:

1. The amount of actual permanent destruction of the ganglion cells of the anterior horns, or of the brain.
2. The amount of nerve cell congestion and edema, and neuritis.
3. The regenerative and reconstructive powers of the nervous system.
4. The amount of muscle degeneration and overstretching (loss of tone).
5. The presence of bone and joint deformities.
6. The curative effect of proper treatment.

The amount of actual permanent destruction of the ganglion cells of the anterior horn depends on the severity of the attack, but there is no way of differentiating it, in the early stages, from the neighboring cell congestion and infiltration, and concomitant neuritis. Complete paralysis, loss of the reflexes and the presence of the reaction of degeneration only indicate the amount of damage, not its permanence. Quvastec and Krafft-Ebbing were always of the opinion that the severe pain complained of in so many cases was due to a neuritis (root symptoms), and that the greater the pain the more the symptoms aforementioned might be held to be due to this neuritis. It is no longer the fashion, however, to speak of neuritis in describing the pathology of this disease. Flexner has recently called attention to the universal involvement of neighboring nerve cells in the congestion and edema accompanying the ganglion cell destruction. Any paralysis due to this congestion, to edema or to neuritis is sure to be recovered from.

The early spontaneous improvement in function, the recovery of the reflexes and loss of the reaction of degeneration, are a good indication of the regeneration and reconstruction of the nervous system. A voluntary motion is a complicated process and is set into action by the activity of a large number of anterior horn cells situated in different horizontal planes; and even if a large part of these centers have been destroyed by the inflammatory process, given the proper stimulation, the nerve impulses will sooner or later seek to find a way by which they may pass around this break in the "connecting circuit," so to speak, and again innervate the damaged muscles. There is, however, no time limit beyond which this spontaneous improvement cannot take place. Six months has been arbitrarily placed as the limit for spontaneous recovery. It is told that the greater part of such recovery does take place within this time limit; but Hoppe of Cincinnati has reported a case in which improvement occurred after twelve years. If six months were really the limit for spontaneous recovery, it is equally true that a great deal of further improvement can be secured, provided the patient is placed under proper treatment.

Too much time and effort need not be wasted in securing the electrical reactions The ordinary practitioner and ordinary hospital are absolutely unequipped to make accurate electric observations At their best, they only indicate the nature of the change (neural) and are not an evidence of the curability or incurability of the process An early recovery from the reaction of degeneration means, of course, an early improvement in the underlying cause of the muscle paralysis or weakness, but its continuance and the persistence of the loss of the reflexes does not mean that recovery of function cannot take place The method of Lovett and Brown, in determining the amount of real paralysis or weakness in measures of pounds of pull, is a real advance in our methods of determining the amount of the muscle damage But here, too, we are confronted with the problem that we are dealing in great measure with young children who are prone to struggle and cry, and in whom repeated measurements must be made before trustworthy ones can be secured, and, as in the case of the electrical reactions, it is not a method to be advised for the general practitioner or the ordinary type of general hospital

Of serious import in the prognosis is the loss of muscle tone, overstretching of muscle and tendons, and the presence of bone or joint deformity Robert Jones has clearly shown that overstretching can be as serious as actual persisting paralysis, and that, in many cases, ganglion cell recovery has been completely masked by the loss of muscle tone It is therefore of vital importance that the limb be placed at once in a position of muscle balance or, where necessary, muscle unbalance in overcorrection, to favor a contracture of the paralyzed or weakened muscle groups One of the most amazing improvements is that seen in a case of drop wrist, kept up by an overstretching of the extensors, after it is put in a Jones splint, or, at times of a flail shoulder when the arm is hyperabducted in the manner advised by Silver of Pittsburgh Deformities, especially equinus, with contracture of the Achilles tendon, must be avoided, and it is not out of place to remind the practitioner that the removal of the bedclothes from off the toes—something which must always be practiced—will not alone accomplish this Volkmann trough splints, with horizontal bars to prevent rotation, must be used and the feet accurately bandaged therein

Of vital importance in the prognosis is the carrying out of the proper treatment to strengthen the weakened muscles The first factor in this treatment is rest, complete rest to the muscles in the physiologic position of the joint (Lorenz) There has been a quiet controversy concerning the length of this absolute rest in bed Judson at one extreme advised eighteen months, Townsend one year, while Lovett in a recent publication advocated that the children be put on their feet as soon as possible Against the latter stand I must protest most earnestly There is a great deal to lose and nothing to be gained by a too early resumption of walking It is the antithesis of rest The day walking is to be resumed by the convalescent is the beginning of a new era It is the resumption of the pleasures and activities of life, and with its dawn the restraints of medical discipline, the precepts of the physician and the ideals of treatment are alike thrown away The boy longs for his bat and ball, and the girl for her jumping rope and dancing, and as soon as possible the normal activities of daily life are attempted It behooves us, therefore, before allowing such freedom, to weigh carefully the dangers of overexertion against the good of early resumption of walking The graded massage and muscle training of the ideal method of treatment can stimulate the weakened muscles only a few minutes or possibly a few hours a day But active exercise and walking stimulate the unparalyzed and stronger muscles for ten times as long What wonder is it, then, if the patient soon returns with a deformity brought on by the contracture of the antagonists?

With rest in bed combined with the use of massage and the interrupted galvanic electricity to keep up the tone and the vitality of the muscle body, resistance exercises and muscle training seeking to open new avenues of nerve communication for the reestablishment of nerve control and recovery of neuromuscular strength, we accomplish most With these methods we find the chances for the recovery of function multiplied manyfold, and cases seemingly hopeless are often restored to activity The use of braces or other mechanical appliances and orthopedic operations should never be undertaken before a muscle survey is made in the manner advised by Lovett, for the purpose of determining what particular group of muscles and what particular muscle function must be assisted or guarded

Whenever possible, parents must be warned lest a badly paralyzed and inactive child overeat and become helpless on account of excessive weight At the Gates Hospital for Crippled Children, we have had in our short career of one year, two cases in which excessive adipositas was the deciding factor between the wheel chair and walking

SUMMARY

The death rate of epidemic infantile paralysis is as high as that of any of the most serious diseases of childhood

While a few perfect complete cures are authentically reported, the vast majority of patients make only a partial recovery of muscle power with a more or less imperfect functional result

Spontaneous cure unassisted by treatment is at its maximum in from three to six months

Careful treatment—physiologic rest, graded massage, stimulating electric applications, resistance exercises, muscle training, etc—improves greatly the chances for partial recovery and lengthens indefinitely the period in which such recovery can take place

Misuse, overwork, overstimulation, overexertion, contractures and deformities are particularly harmful and detract from the power of recovery and often destroy what little muscle power has been gained

The prognosis should always be guarded, conservative and truthful, lest the parents, expecting too much, should in their disappointment throw away all rightful gain in strength, power and function, while seeking the chimera of a "perfect cure" With proper treatment, followed by braces, orthopedic operations and the like, almost every patient with infantile paralysis should, so to speak "be put on his feet" and acquire independent and useful function of the afflicted member

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ABSTRACT OF DISCUSSION

DR HENRY W FRAUENTHAL, New York It is my personal experience that what these cases lack is intelligent observation We are trying to lay down rules for general practitioners, and should teach that if a child is under intelligent observation, it will not have deformity and contracted muscles Regarding the matter of keeping the patient on the back for six months or a year to a year and a half, I think that if the heart is so damaged, it will do more harm, almost, than the paralysis, taking months to recover from the effect, based on the experiences of the Mayo Clinic I start to treat my patients right after the temperature drops to normal, and sometimes before, and have seen no damage ensue The damage, I think, all comes from neglect, from putting on a brace and saying, "Goodbye, come back again in three months" Braces are not the treatment, plaster of Paris is not the treatment, the thing to do is to try to establish the function of the muscles If you keep the patients under observation, you do not have these terrible results, as have been described here today It is sending them home and having some one else attend them that causes the trouble If they have intelligent massage and electricity, under the guidance and supervision of a doctor, and later, muscle education, preferably by reflecting the image in a mirror, you get higher muscle perfection than in any other way We are responsible for the ill results of our neglect The treatment of these cases should not be turned over to the family physician or the parents, unless they have constant supervision by us No brace device will keep a foot from becoming deformed, unless the brace does more damage than the disease itself

Dr Walter G Stern, Cleveland It is all very well for us to tell each other that we have our patients under continuous observation, perfect control and all of that, but do we in reality enjoy such an ideal state of affairs? This point cannot be determined by what we think our patients are doing, but only by a survey of the state of the cripple We in Cleveland are now making such a survey These patients go from one doctor and from one hospital or dispensary to another Your records show that they are coming regularly to your dispensary in the afternoon, but on investigation you will find that they have been to some other dispensary in the morning and perhaps will consult the osteopath or chiropractor at night There are very few patients with infantile paralysis who have not consulted and have not been treated by a half-dozen different physicians or agencies If this be true, then having them under "perfect control" is impossible The day the child wants to get up is the day that the mother gives a party and from that day on the limb is used as much as possible We have heard much that massage should be graded and careful This is what good treatment ought to give every case But how careful and how graded are the attempts of the child to dance or jump the rope? By these violent exercises the patient can undo in a half hour of activity all the good effects of weeks of careful muscle training This is why those with more experience than I, have advised that when the acute stage is over the child should be kept at rest for a comparatively long time, and while in bed given the exercises, massage and muscle training as indicated by the condition present

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Suicide and the Aged—The statistics of suicide might throw some light on the question whether or not old people cling to life in spite of their misfortunes According to the French statistics for 1910 (*La Semaine Medicale*, 1912, No 41), the "frequency of suicide runs parallel with age, and the maximum is attained in the most advanced period of life" Suicide at all ages is two and a half times more common in France than it is in England, but our English figures do not support the statement that it tends to become more common as age advances Not only do the numbers fall rapidly after 65, but they do so in greater proportion than the decrease in the number of persons living at those ages In France the most common cause of suicide is said to be "physical suffering," which would afford a reasonable excuse for suicide in old age, but the difference between the figures in the two countries is probably dependent on temperament, the more patient Anglo-Saxon bearing the burden of age more stoically than his Celto-Iberian neighbor —Saundby

THE NECESSITY OF REVISING THE NOMENCLATURE OF THE ANATOMY OF THE BRAIN *

WILLIAM FULLER, M D
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About fifty-five years ago I commenced the study of anatomy by examining the bones by sight, then, by the sense of touch alone, endeavoring to determine to which side of the body each belonged, afterward dissecting the cadaver and learning the names of the parts without reading the text Later drawings were made from plates found in books, as well as from the subject In this manner a familiarity with the structure was easily acquired The names, unusual and frequently those of persons and things without reference to the functions of the parts, required much effort to learn and were difficult to retain in the memory This difficulty was more apparent when the study of the anatomy of the nervous system was reached, on account of the fact that little was known of the relation of the nerve centers and their connecting tracts, and consequently of their functions

At this time the dissection of the brain consisted of slicing its substances along certain lines, learning its lobes and fissues, and its ventricles, their boundaries and contents As for useful information, the soil was barren of practical ideas and was used mostly as a place for the registration of the names of the ancients and of those unfamiliar objects long out of use

Later the field of knowledge was extended by the use of the microscope, experiments on animals, the tracing of tracts of degeneration, cerebral localization and the observations of the parts involved in hemorrages, tumors and other pathologic findings Other names were added to the list, until at the present time the nomenclature is oppressive and a great hindrance to progress As it is, the medical student turns in disgust from his futile efforts to conquer a subject which appears to him to be impractical, striving only to learn (not understand) sufficient to pass an examination and to shun the study forever after

In the study of anatomy, as in all other branches of science, simplicity should be our aim The use of generalization is a great help to the student Structure and its supposed function should be considered together in giving a name to any part of the body, so that one reading the history of medicine might be able to compare the progress of one age with that of another When found necessary, names could be changed to conform with the understanding without much confusion by writing the old names in parenthesis, similar to the change now taking place by the introduction of the decimal system of weight and measures A gradual change effected in this manner would mark an advance in knowledge at any particular date, and the slight embarrassment suffered would be compensated for by the elimination of a senseless terminology which now oppresses the memory to the exclusion of practical ideas

I will mention, in illustration, two of the many absurdities of the present nomenclature The cingulum (girdle), properly named, should be called the superior internal longitudinal commissure, one of the four great longitudinal commissures associating the regions of the memories with the frontal lobe of the brain This large tract arises in front from the olfactory and marginal convolutions, passes backward over the corpus callosum, then downward and forward and terminates in the hippocampal lobe A different name is applied to each of three different parts of its course As nearly all parts of the brain encircle the bundles of the internal capsule in the same manner, why select this particular girdle as the cingulum, when they could all be represented together in a single generalization?

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* Read before the Section on Nervous and Mental Diseases at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916

Again, there are the "forceps major" and "forceps minor", I have dissected many brains and have failed to discover them

Multiplicity of names could be avoided and simplicity attained by the adoption of a systematic generalization of the parts of the central nervous system in connection with that of the whole body To illustrate, roughly speaking, histologically the body is composed of several segments, modified to conform to the symmetry of the whole Each segment is composed of all the elements contained in the others, though developments of these elements are unequal Thus each somatic segment consists of a vertebra, a ventral, or nutritive, arch in front and a dorsal, or neural, arch behind Superimposed, these segments form cavities, the former enclosing the viscera of nutrition, and the latter the brain and spinal cord Displacements occur both in the parts of the body and in the viscera of any segment, and both are enervated by the nerve center corresponding to each individual segment, the knowledge of which explains many related reflexes and otherwise obscure symptoms of disease For example, in pneumogastric irritation the somatic reflexes are manifested on the face This is true of the central nervous system, except that displacements are limited Each segment of the nervous system contains the same structural elements, though differently disposed, and often the dissection of one of these throws light on the anatomy of the others

A comparison of the structure of the cerebrum and cerebellum shows that a hemisphere of each is composed of a hemisphere ganglion, corona radiata, internal capsule, basal ganglia, corpus callosum, commissures of association, ventricles and other parts, all of which are distinct and homologous Why then should the several parts not be designated by the same names and distinguished by an affix, "cerebri" or "cerebelli," as the case might be? A dissection of the ganglia of the segments of the spinal cord displays the same elements in each A marked difference in the arrangement is that the hemispherical ganglia of the spinal cord are enclosed by the white substance of its several tracts, which becomes everted at the lower part of the medulla oblongata, so that the relation of the gray and white matter is reversed above this locality, in order to accommodate the increase of function required of the cerebellum and cerebrum

In the description of the anatomy of the spinal cord we are also confronted and confused by the names of the columns of Turck, Rolando, Gowers, Spitzka-Lissaur, Burdach, Goll and Clark A much more simple and convenient method would be to divide each half of the cord into three columns, and these again into the tracts of which they are composed Thus, the anterior column, betwen the anterior median fissure and the motor nerve roots, consists of anterior median and lateral tracts, the lateral column contains the direct cerebral, the direct cerebellar, the crossed pyramidal and the reticulated tracts, the posterior column is made up of the posterior median and the lateral tracts (Goll and Burdach) Clark's "vesicular column" probably represents the cerebellar element of the spinal segments of the cord, and might be thus designated until a better theory of its function is advanced

When the American Medical Association met in this city about twenty years ago, I showed in this section castings made from the dissections of the brain I was asked by several members present of the possibility of repeating them for the purpose of teaching After having reproduced them, it was found that they were not practical in instructing a large class of students, doubts were also expressed that the nervous tracts could be isolated and demonstrated in continuity by dissection, as exhibited in the models

Photography, however, has dispelled all such doubts, since by the use of the stereoptic camera dissections can be exhibited as seen on the natural subject, specimens of which I am pleased to show you at this time Lantern slides also can be made to project these pictures on a screen, not flat, but as solid objects Other methods of instruction are available, even of greater and more permanent advantage to the student

It affords me great pleasure to do this work, not altogether because of my personal interest in its pursuit, but as well to gratify a desire to do all that I can to assist the student, and also because of the wide scope of its utility in promoting the sciences of psychology, psychiatry, education and eventually justice Even when we attempt to associate the knowledge acquired of the anatomy and functions of the nervous system with any one of these sciences, we are again in the presence of technical words and phrases of uncertain signification It appears to me that the science of the mind might be reduced to a few basic principles, easily understood, and from which all the phenomena relating to mind are evolved as the result of reflex action, and that the terminology could be greatly simplified

ABSTRACT OF DISCUSSION

Dr I Leon Meyers Chicago The nomenclature of the anatomy of the brain is in a number of instances in great need of revision, as in its present state it is now and then misleading

The terminology of the cerebellum is obsolete and at variance with the great advances made in the embryology, morphology and physiology of the organ In dividing the cerebellum into its various lobes, prominence is given to the monticulus—which comprises the culmen and the declive—as a division of the superior vermis The impression is thus conveyed that the culmen is a part of a unit distinct and separate from the lobulus centralis which is situated anteriorly to it As a matter of fact, however, the culmen belongs embryologically morphologically and physiologically to the lobulus centralis and these two, together with the lingula, form the lobus anticus (Elliot Smith) The same is true as regards the lobus quadrangularis on the superior surface of the hemisphere This name would imply that its two parts (the anterior crescentic and posterior crescentic lobules) constitute one unit, whereas in reality the anterior lobule belongs to the lobus anticus, and the posterior lobule to the lobus medius The prominence given in descriptive anatomy to the sulcus horizontalis magnus—a morphologically unimportant sulcus—has been long ago deprecated by Stroud, and attention is called to this also by Cunningham in his "Text-Book of Anatomy" The name tonsil applied to an important lobule on the inferior surface of the cerebellum in man, originally given to it because it was thought to be an appendage of the uvula, so that both were described under the term of lobus uvulae (Cunningham)—is without justification, as the tonsil is morphologically the anterior part of the alae lobuli medii, or the hemispheres Elliot Smith has also pointed out the fallacy of dividing the suprapyramidal part of the vermis into a clivus, folium cacuminis and tuber valvulae, all these constituting one common structure The extent to which the present terminology is misleading is shown by the confusion which resulted when experimental physiologists endeavored to apply the results of their studies on lower animals to the cerebellum of man We thus find, for example, a man of such eminence as Dr Rothmann of Berlin identifying the lobulus paramedianus (the tonsil or amygdalus in man) with the gyrus semilunaris inferior, the crus secundum (the lobulus biventer) with the gyrus semilunaris superior, the formatio vermicularis (the lobulus flocculi) with the lobulus biventer, and the crus primum (the lobulus semilunaris superior) with the lobus quadrangularis

Dr William Alexander Jones, Minneapolis Dr Fuller's efforts to simplify the nomenclature and terminology on the fiber system of the brain should meet with general approval For many years I taught from some of Dr Fuller's models and I still study his architecture of the brain with confidence The illustrations are very clear and they make the brain structure easier to remember

Dr. Walter B Swift, Boston I have taught anatomy of the brain and psychoneuropathology for four years When I went into this course there were charts and vague models and vague representations of tissue I soon dispensed with all that, and supplied real brain and tissue sections for study This has made the teaching much more simple and gives the student a chance to have in mind the visual pictures of the *real tissue* just as it is, not merely visual pictures of charts and models Dr Fuller has taken this matter one step farther, and shown not only the tissue and sections, but the relations of correlated tracts, and made that subject much easier to learn than from mere flat cross section I shall use this method more than ever next year

Dr D Booth, St. Louis The use of proper names in connection with parts of the anatomy is very poor policy, because in that case the student has that abstract fact to remember instead of having the data formulated in his mind I have always thought it easier to say *iter a tertio ad quartum ventriculum*, than to say aqueduct of Sylvius, because we are dealing with the things which we are trying to demonstrate Association is a great aid to memory

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PERFORATED ULCERS OF THE STOMACH AND DUODENUM*

RAYMOND P SULLIVAN, M D

BROOKLYN

Perforation of a gastric or duodenal ulcer is a most serious condition The prognosis is extremely grave unless recognized early and quickly followed by direct and heroic treatment Of all the acute maladies to which humanity is heir, none is more grave and none more spectacular when attended by successful treatment The treatment is purely surgical However, Moynihan[1] reports two cases successfully treated by medical means during the acute stage, but in each instance the cases came to operation at a later date We occasionally hear of deaths from "acute indigestion," but proper investigation would prove, in the majority of instances, that there was a perforation of either a gastric or duodenal ulcer This should not occur at the present time The burden of diagnosis will rest with the general practitioner and, even though an accurate diagnosis may not be made, at least there are always sufficiently grave signs to demand a surgical consultation and intervention

The etiology of perforation is that of ulcer in general plus its acute termination It results from a local necrosis and may be due to trophic disturbances or bacterial invasions, or it may follow trauma However, a previous chronic ulcer is usually present The immediate cause of the perforation may result from one of many factors In all series reported, muscular exertion, trauma, food or alcohol ingestion are given as the immediate factors conducive to perforation The series here presented will confirm this That an infective process predominates seems to be shown by the fact that so frequently there is a two-cycle phenomena of pain A premonitory pain of greater or lesser degree was present in fourteen instances in this series I believe this is due to a rapid necrosis, causing peritoneal irritation and spasm and hence the pain Just how long the peritoneum will hold against this process cannot be determined exactly The "big pain" has followed on an average of eight hours in each instance

The chief symptoms which lead to a correct diagnosis in these cases are (1) pain, (2) tenderness, (3) vomiting, (4) rigidity, (5) history of previous ulcer symptoms, (6) anxiety and restlessness, and (7) increasing pulse and rise of temperature This enumeration is considered in the order of frequency observed in the series here reported

Pain is sudden and violent Its character is variously described by patients as "sharp," "cutting," "burning," or "bursting and stabbing" The prominent characteristic is the fact that it is unyielding Its localization is mostly epigastric and supra-umbilical Its quick radiation at times to the right iliac fossa has frequently led physicians and surgeons to consider an acute appendicitis, but careful inquiry of its early appearance most frequently localized it in the epigastric and right hypochondriac regions Its radiation may be in any direction The prominent factor is that the pain is excruciating and increasing in severity to such a degree that the patient is unwilling to submit to much examination

Tenderness is unmistakable It is acute and easily elicited When the case is seen early, a careful and gentle palpation will lead to a marked tenderness over the site of the perforation The site of maximum tenderness in this series varied mostly in the gastric perforations There were fifteen duodenal perforations, and in twelve of them the most tender area was in the right hypochondriac region In three, the right iliac fossa was made out as the most tender area, hence the improper clue to a correct diagnosis Of the five gastric cases the maximum tenderness was all epigastric, and in one of these it was to the left of the median line

Vomiting occurs very early, either reflex or induced, and is a valuable symptom Frequently it gives slight relief to the agony at first, but later only increases the pain However, I cannot say that vomiting will lead to any positive sign, for it may be present in almost any abdominal condition Eliot[2] reports two cases in which there was no vomiting at all In this series of cases, both gastric and duodenal, vomiting occurred very early and in every case The character of the vomitus varied with the amount of food previously taken and also with the site of the ulcer In duodenal cases the vomitus was greater in amount than in the gastric cases

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[1] Moynihan Abdominal Operations, i, 165

[2] Eliot Ann Surg, lv, 594

The second symptom of greatest value is that of rigidity of the abdominal muscles Its appearance is early and its increase always in proportion to the length of time following the onset of symptoms Deaver[3] very aptly says, "There is no condition in which the upper abdominal rigidity is so early and so marked as in perforated ulcer" In our experience with these cases we have relied chiefly on the character of the pain and the amount of rigidity as the principal indications of perforation The "boardlike" type is the most significant guide, and the fact that it is continuous points to a progressive peritonitis and hence is of great value as a diagnostic sign

When a patient is seen suffering from so acute abdominal pain and has this characteristic rigidity, the history of previous indigestion of ulcer type is usually obtainable In this series of cases only one instance is noted in which previous ulcer symptoms failed to be elicited

In this case there was a history of trauma eight days before perforation and the patient was confined to bed being treated for 'contusion of the abdomen," following an injury On the morning of the eighth day after the injury, he was informed by his physician that he could go about, but was warned against any exertion or violent exercise The patient said he felt so good that he determined to return to work and did so During the afternoon, while lifting a "heavy case onto a wagon" he was taken with the terrible pain in the pit of the stomach, which increased every minute and necessitated calling an ambulance He was taken to the hospital and we operated three hours later, finding a perforated gastric ulcer on the anterior wall about 4½ inches from the pylorus (Case 12)

In all other cases the previous ulcer symptoms were present In eleven a diagnosis of chronic ulcer had been made and all had been treated by medical means with the uniform result of temporary relief for a variable length of time This would seem to indicate that surgical treatment should be instituted for chronic ulcer, if for nothing more than a prophylaxis against perforation

In cases of so grave a nature one might expect that shock and its associated signs would be manifest However, this was not found in this series The patients, on the contrary, seemed to be in fairly good general physical condition In only one instance, and that one was seen late, was there any evidence of shock Yet these patients all presented an appearance of anxiety and restlessness which signified that some great calamity had taken place within them Their attitude was one of intense suffering But the average pulse rate in this series was 90 The average temperature was 99 8 F The average respiration was 34 I consider the increased rate of respiration an objective sign of value, because of the attempt on the part of Nature to restrain the movements of the diaphragm, and thus lessen the pain However, if shock is present, it is not a contraindication to immediate operation If the patient presents signs of perforation, immediate surgical intervention is indicated, and every hour of delay decreases the chances of recovery to a marked degree In Case 10 of this series the man arrived at the hospital fourteen hours after the onset of the intense pain He was in profound shock, and exploration revealed a large perforated gastric ulcer with a general peritonitis He received very little anesthetic and the perforation was closed His reaction was good He lived five days A reperforation superimposed on his general peritonitis was the cause of his death

It is a noteworthy fact that in this series not once is "absence of liver dulness" recorded It is therefore considered that this sign is not as valuable as we might expect However, in a series of cases recently reported,[4] "modification of liver dulness" was noted in 127 out of 175 cases of perforated gastric ulcer The amount of distention which might cause the modification of liver dulness has frequently been attributed to the escape of gas into the peritoneal cavity This will be true if the amount of gas is sufficient However, it is my opinion that when there is an absence or modification of liver dulness the cause is chiefly that of a progressed peritonitis Hence, if this condition can be made out, its value is simply that of an unfavorable prognostic sign Numerous symptoms and evidences other than those mentioned may be found, but the time spent in eliciting them will only delay operation and hence increase the chances for a fatal outcome

Given a patient who is taken suddenly ill with an acute cutting or piercing epigastric pain which is continuously agonizing and accompanied by a unique or marked rigidity of the abdominal muscles, particularly of the upper half, and from whom a previous history of indigestion is obtained, the most imperative indication is operation Differential diagnosis may have scientific value, but the moral value is dependent on early operation There is no excuse for delay in the presence of such symptoms It is true that acute appendicitis, perforation of the gallbladder, acute pancreatitis and acute intestinal obstruction may give an almost identical picture However, the treatment in each of these conditions will be early operation It is, therefore, necessary that a surgeon should see these cases as soon as possible

Between September, 1910, and March, 1916, it was my opportunity to operate in twenty cases of perforated ulcer In this series there were fifteen duodenal and five gastric perforations Death resulted in one case of perforated gastric ulcer There were six females and fourteen males The average age was 34 years The average duration of acute symptoms before operation was about six hours The treatment in each case was surgical

In the gastric cases the site of the perforation was found to be in one instance (Case 2) on the lesser curvature and the treatment used was excision and suture closure

In another case the perforation was on the posterior wall (Case 11) about 1½ inches from the pylorus The attempt to close this, both by an approach through the lesser sac and by a transgastric method failed and finally we did a pylorectomy and posterior gastro-enterostomy This patient had been under observation and a diagnosis of chronic gastric ulcer was made He was ordered to be prepared for operation, Nov 29 1913 At 8 p m, November 28, he received a gastric lavage At 4 a m, on the 29th, he was taken with severe epigastric pain soon followed by vomiting which contained a good deal of blood-streaked mucus At 6 30 a m, a second and more intense epigastric pain came on suddenly and continued with increasing severity I saw him at 7 30 a m, and the boardlike rigidity of the abdomen was present with extreme tenderness in the epigastric region He was quickly submitted to immediate operation When the peritoneum was opened a thin serous fluid escaped, but no blood clot or mucus The lesser sac was distended and immediately opened A large blood clot was removed, followed by mucus, blood and bile The perforation was found to be about 1/16 inch wide and plugged with a clot of blood Our attempt to close it was unsuccessful, and in view of his good general condition and also from the fact that the general peritoneal cavity was not soiled by food particles, we proceeded with the pylorectomy and suture posterior no loop gastro-enterostomy Drainage was instituted and the wound closed from below upward to the drain His convalescence was stormy for two days, but soon returned to normal His condition today is excellent He has gained 26 pounds and enjoys his food without any distress

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[3] Deaver J B Posterior Gastrojejunostomy in Acute Perforative Ulcer of the Stomach and Duodenum The Journal A M A July 12 1913 p 75

[4] Edinburgh Med Jour December 1914 p 461

In three cases (7, 10 and 12) the perforations were on the anterior wall In Case 7, the site of the perforation was in the pars media and close to the greater curve or about 3 inches from the pylorus In this case the history of acute pain was five hours in duration, and the vomitus contained a good deal of blood When the peritoneum was opened there was an escape of gas and many blood clots, with a large amount of mucoid material and a few food particles The perforation was small and closed by a purse string suture of chromic catgut with reinforcement by three Lembert sutures of fine linen This was followed by a thorough cleansing of the abdominal cavity by means of the Pool-Kenyon sucking apparatus A soft rubber tube drainage was inserted at the lower angle of the wound The patient made an uneventful recovery She has not been seen or heard from since Feb 23, 1913

PERFORATION OF GASTRIC AND DUODENAL ULCERS

Case No	Sex	Age	Hours of Symptoms	Preoperative Diagnosis	Operative Findings	Operation	Drainage	Soft Diet After Op	Dis from Hospital	Result
1	M	35	6	Pf d d ul	Pf d d ul	Perforation closed	Yes	9 days	22 days	Gained weight no symptoms
2	F	51	10	Pf gast ul	Pf gast ul	Excision and closure	Yes	10 days	30 days	No disturb good health
3	M	23	8	Acute append	Pf d d ul	Closure and Gas Ent	Yes	5 days	15 days	
4	M	32	6	Pf d d ul	Pf d d ul	Perforation closed	Yes	8 days	21 days	Condition perfect
5	M	22	4	Acute append	Pf d d ul	Perforation closed	Yes	8 days	24 days	
6	F	41	4	Pf gast ul	Pf d d ul	Closure and Gas Ent	Yes	6 days	26 days	
7	F	19	5	Pf d d ul	Pf gast ul	Perforation closed	Yes	10 days	22 days	
8	M	30	6	Pf gast ul	Pf d d ul	Closure and Gas Ent	Yes	6 days	20 days	
9	F	26	5	Acute append	Pf d d ul	Closure and Gas Ent	No	5 days	16 days	
10	M	56	14	Pf gast ul	Pf gast ul	Perforation closed	Yes			Died
11	M	59	8	Pf gast ul	Pf gast ul	Pylorectomy and Gas Ent	Yes	10 days	28 days	Gained weight good health and appetite
12	M	25	4	Pf d d ul	Pf gast ul	Perforation closed	No	7 days	14 days	Some distress
13	M	38	6	Pf d d ul	Pf d d ul	Closure and Gas Ent	Yes	6 days	24 days	Gained in weight, excellent health
14	M	33	4	Pf gast ul	Pf d d ul	Closure and Gas Ent	No	5 days	21 days	Little gastric distress after eating
15	F	38	7	Pf d d ul	Pf d d ul	Closure and Gas Ent	Yes	5 days	23 days	Gained in weight, excellent health
16	M	24	5½	Pf d d ul	Pf d d ul	Perforation closed	No	8 days	18 days	Some distress
17	M	37	6	Pf d d ul	Pf d d ul	Closure and Gas Ent	No	6 days	27 days	Excellent in every way
18	M	29	9	Pf d d ul	Pf d d ul	Closure and Gas Ent	Yes	5 days	25 days	Gained weight, good health and appetite
19	F	41	5	Acute append	Pf d d ul	Perforation closed	Yes	9 days	23 days	
20	M	22	4½	Pf d d ul	Pf d d ul	Closure and Gas Ent	No	5 days	15 days	

In Case 10, the perforation was situated on the anterior gastric wall about 2 inches from the pylorus The lumen of the perforation admitted two fingers It was the largest that I have ever seen The duration of symptoms was fourteen hours The patient was in shock and presented all the evidences of a man rapidly dying from a general septic peritonitis The abdomen contained an enormous amount of thick turbid fluid, with many food particles Numerous gas bubbles were noted A grayish white exudate covered the entire under surface and margin of the liver Many loops of bowel were matted together by the same sort of exudate The perforation was closed by two rows of sutures and covered by an omental graft The abdominal cavity was thoroughly cleansed by the sucking apparatus, and drainage instituted It was noted that the closure embarrassed the pyloric opening very much However, because of the precarious condition of the man, gastro-enterostomy was not attempted Drainage was placed at the lower angle of the wound and likewise in both flanks The patient was in very good condition for three days He retained all liquids, both by rectum and by mouth, and we were jubilant However, he was a man accustomed to a full diet and on the fourth day got out [illegible] and attempted to take food from a patient across the ward He was arrested in his attempt by the nurse This displeased him very much and brought forth a vigorous complaint when seen on morning rounds But he was not to go hungry Somehow he managed to get word to his wife and she smuggled a piece of beefsteak to him that afternoon Fearing detection, he must have masticated his meat very poorly and had finished about two thirds of it before he was discovered by the nurse We did nothing when this was reported However, about an hour and a half later he was seized with intense pain and vomiting When his abdominal wound was examined by Dr Coakley, the house surgeon, it was found to have been ruptured and that there was an escape of gastric contents We reopened the entire wound and found that a reperforation had occurred Some meat was found in the stomach and also particles in the abdomen A rubber tube was inserted into the perforation and a gauze pack placed around its base, hoping for a gastric fistula The patient died fourteen hours later of a general peritonitis

In Case 12, the perforation was situated on the anterior wall about the junction of the pars cardia and the pars media This case resulted from trauma and the perforation occurred eight hours after the injury The immediate cause of the perforation was attributed to muscular exertion On opening of the abdomen in the median line, the entire anterior wall of the stomach was ecchymotic The perforation was very small in caliber The adjacent stomach was quite adherent to the anterior wall of the abdomen A purse string of chromic catgut was first used to close the perforation, and then three Lembert sutures of fine linen placed to reinforce the closure After removal of the appendix, which was found to be chronically diseased, the abdomen was closed without drainage This man had very little reaction, and left the hospital on the fourteenth day after the operation

In the fifteen duodenal cases multiple ulcers were noted in only one instance (Case 18) The site of the perforation in twelve of these was on the anterior wall and in the first portion of the duodenum In two instances (Cases 15 and 17) the perforation was on the upper border and close to the pylorus In one instance (Case 13) the perforation was on the posterior wall and about 1 inch from the pylorus The operative procedure in dealing with these cases was as follows In ten cases (3, 7, 8, 9, 11, 13, 14, 15, 17 and 18) the perforation was closed by two layers of sutures The abdominal cavity was then thoroughly cleansed, either by the sucking apparatus or by mopping out with gauze This was followed by a posterior no loop gastro-enterostomy Recovery in each instance was most satisfactory and without any marked degree of reaction or discomfort In five cases (1, 4, 5, 16 and 20) the operative procedure was a simple closure of the perforation by two rows of suture and covering with an omental graft This was always followed by a thorough cleansing of the abdominal cavity by means of the sucking apparatus or mopping out with gauze pads In two cases (16 and 20) no drainage was used In the convalescence of these cases it was noted that the patients suffered a great deal more pain and discomfort than those in which gastro-enterostomy was done

In the operative procedure used in the series under consideration, routine doses of $\frac{1}{4}$ grain of morphin and $\frac{1}{100}$ grain of atropin were given as early as possible after deciding to operate The anesthetic in every case was ether by the open-drop method The site of the incision was in most cases a midright rectus one in the upper zone The method of Gibson[5] to determine gas by the use of water in the wound before opening the peritoneum was practiced in one case (Case 19) and proved very satisfactory Gas bubbles were seen immediately after the peritoneum was opened, and before discoloration or disappearance of the water The incision should be generous and thus permit of easy exploration and thorough cleansing of the abdominal cavity To accomplish this cleansing, the sucking apparatus devised by Pool and Kenyon was used in the majority of cases Its operation is simple and its results very satisfactory Its advantage over mopping out with gauze is that there is less injury to the peritoneum, and hence lessened opportunity for the formation of adhesions

The principal feature open to discussion in the operative procedure, when dealing with a perforation of a gastric or duodenal ulcer, is whether or not a gastro-enterostomy should be added, after the closure of the perforation There are many opinions for and against The most recent that has come under my observation is that of Gibson,[6] in which he says

> I reject gastro-enterostomy as a curative measure in this class of cases, notwithstanding that I have had very gratifying experience with it in the cure of chronic ulcers I consider it unwise to do a gastro-enterostomy for a condition that is going to be cured anyhow In a very small number of cases in which gastro-enterostomy may possibly become necessary, it can wisely be postponed until its indications are clearly recognizable The small number of cases in which it may be necessary will probably be balanced by the number of cases in which gastro-enterostomy fails to prove satisfactory, either because it is improperly placed, too small (subsequent shrinkage), too large (a very disagreeable condition) or the rare but exceedingly grave gastrojejunal ulcer Moreover in dealing with acute perforations it seems wiser to do only what is absolutely necessary and not subject the patient who may have to struggle with a possible peritonitis to an unnecessarily long operation or risk spreading the infection by the performance of a gastro-enterostomy under imperfect aseptic conditions The after history of this series of cases contains no instances in which we have had occasion to regret the omission of this step

This is a clear, concise and positive statement It has been made after a very practical and painstaking study of end-results I regret that it was impossible for me to locate my cases in time to make Roentgen-ray studies However, we have been able to interview most of them and we shall discuss the end-results at another time The position of Dr Gibson deserves serious consideration and will undoubtedly furnish a safe guide to any one who considers gastro-enterostomy too grave an operation to be done in the presence of a perforation However, this attitude has not met with general practice Eliot[7] presents a series of communications from numerous advocates Among them are Bretano and Korte of Berlin, Krogius of Helsingfors, Petren of Lund, and W J Mayo, Peck and Woolsey of this country These men do not favor it as a rule, but depend on the factors of (1) a good physical condition of the patient, (2) the narrowing of the lumen of the pylorus by the closure of the perforation, and (3) the site of the ulcer being at or near the pylorus Deaver[3] is more enthusiastic, and says that "the danger of infection of the lesser peritoneal cavity by gastro-enterostomy has been overrated" He goes further and considers the operation safe even after sixteen hours of duration of symptoms, claiming that at this time "it is simply a matter of dexterity"

In this series, gastro-enterostomy was added to the closure of the perforation in ten cases In one it followed pylorectomy, making eleven instances The factors that were taken into consideration as indication for the operation were 1 The general condition of the patient would permit it 2 The duration of symptoms was not over ten hours 3 The site of the perforation was close to the pylorus, and closure of it seemed to narrow the lumen to a marked degree 4 It was assumed that by its performance the period of convalescence would be materially shortened, a factor always worthy of consideration, especially among the class of patients we meet in the wards of our city hospitals 5 We assumed that if there were multiple ulcers gastro-enterostomy would diminish the possibility of a second perforation We never started out with an idea of speed, in fact, our work in each case was deliberate and careful The average length of time taken to do the gastro-enterostomy was between thirty-five and fifty minutes In all cases in which this operation was done, we did not encounter any increase in infection Neither did we have any reason to regret our procedure The patients all made satisfactory recoveries and enjoyed their semisolid food with more relish than those on whom we did the simpler operation of suture closure From this experience we feel that there is a place for gastro-enterostomy in the treatment of perforated ulcers of the stomach and duodenum It is our opinion also, that in perforations at the cardiac end or on the lesser curve of the stomach, gastro-enterostomy should not be attempted Either excision and suture closure, or simple closure should be the procedure in these cases

In the consideration of the subject of drainage of these cases, we have come to do less of it Especially is this true in patients operated on within four or five hours after perforation Our method has been to drain the affected zone with soft rubber tubes In only one instance have we used counter drainage Our routine has been to drain through the original abdominal wound At no time have we used the suprapubic drainage By the aid of the sucking apparatus most of the abdominal fluid can easily be removed, and hence fewer and smaller drainage tubes need to be employed However, in late cases, I would consider it unwise not to use sufficient drainage

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[5] Gibson Surg Gynec and Obst., April 1916.

[6] Gibson Surg, Gynec and Obst xxii 393

[7] Eliot Ann Surg lv 709

The postoperative care of these patients is important The Fowler position and saline by rectum should be instituted immediately In this series when gastro-enterostomy was done, water was given by mouth in from ten to twelve hours after the operation Four to six hours later, if the stomach remained quiet, they received milk or other fluids in increasing amounts In the cases of simple closure of the perforation, nothing was given by mouth from thirty to thirty-six hours after operation Then small quantities of water by mouth was allowed at frequent intervals for six to ten hours If the stomach did not rebel, other fluids were administered in increasing amounts All patients received an enema at the end of thirty hours and then daily for five days At this point a cathartic, usually castor oil, was given Soft solids were given the gastro-enterostomy patients on an average of the fifth or sixth day, and increased as rapidly as possible The simple closures did not receive this diet until on an average of the eighth or ninth day The question of diet in the postoperative care of these patients has been the subject of considerable discussion Gibson[6] very potently says, "It is about time that we get away from the fetish of underfeeding or of the particular value of certain kinds of diet," in the after-care of these cases I agree with this in every way Nothing can be more of a worry to a patient than to know that he must adhere to some certain kind of rigid diet for a long time When the patient is discharged from the hospital he should be able to handle a regular diet However, we have cautioned against the use of very coarse food and have endeavored to educate the patient to the fact that good digestion depends mainly on mastication

In our attempt to compile the end-results in this series, we have not had the success desired Most of these patients belong to a migrating class and hence it is next to impossible to locate them However, we have secured information in twelve cases of the series (Cases 1, 2, 4, 10, 11, 12, 13, 14, 15, 16, 17 and 18) Of this number four (Cases 2, 10, 11 and 12) were gastric and the other eight were duodenal perforation In the gastric cases there was one death, previously detailed In the three remaining cases all report a gain in weight and freedom from pain Patients 2 and 11 report that they enjoy good appetites and relish their food without any signs of stomach distress, either immediately after or later In Case 12, which was traumatic in origin, the patient reports that he suffers with an occasional distress and considerable gas belching beginning twenty to thirty minutes after eating and lasting about ten minutes In the eight duodenal cases, five (Cases 13, 14, 15, 16 and 18) had gastro-enterostomy done after the closure of the perforation All report gain in weight and freedom from any distress or pain They seem to enjoy *perfect health in every way*, and assure us that they are not worried about any recurrence of their trouble We did not receive a similar encouraging report in the three remaining cases (Cases 1, 14 and 16) in which simple closure was done Patient 1 says that he has intermittent spells of distress coming on three to four hours after eating and is always relieved by an alkali However, he further says that these attacks are now less frequent and of shorter duration Patient 4 has no complaint to make except that he is "bothered with gas after eating which lasts about one-half hour" Patient 16 was operated on, Dec 6, 1915 We did a simple closure of the perforation, five and one-half hours after the onset of symptoms No drainage was used He had a small skin stitch infection and left the hospital eighteen days after the operation in apparently good condition He was seen and interviewed, May 6, 1916, just five months after the operation His history was that he enjoyed perfect health up to May 3, 1916 At this time he began to have rather an agonizing pain in the pit of his stomach, coming on about two hours after meals and accompanied by considerable sour regurgitation Vomiting occurred twice He refused Roentgen-ray examination or gastric analysis However, by palpation and percussion there was distinct evidence of a gastric dilatation, apparently caused by some degree of pyloric stenosis His appendix had previously been removed and *we advised gastro-enterostomy* However, he elected to try his alkali once more

CONCLUSIONS

1 The diagnosis of perforation of a gastric or duodenal ulcer should be made in the majority of cases, and the imperative indication is early operation

2 In the treatment of cases of duodenal or prepyloric perforations, gastro-enterostomy can safely be added if patients come to operation within ten hours after the onset of symptoms

3 Simple closure of the perforation without gastro-enterostomy is a safe routine, but later stenosis is more apt to occur

4 Drainage can be discarded in early cases, especially if operation is performed within six hours after the onset of symptoms

5 Early use of a liberal diet should be practiced

6 A complete study of end-results is a necessity before any definite routine can be laid down

208 Jefferson Avenue

ABSTRACT OF DISCUSSION

Dr Charles H Peck, New York Cases of perforation of gastric and duodenal ulcers fall into three classes First, the acute perforation with considerable immediate leakage, the type of case which Dr Sullivan reported, second, the chronic penetrative ulcers which are protected by inflammatory adhesions and never have any considerable leakage at one time, and third, the ulcers which leak from time to time, causing attacks of localized peritonitis, and soon becoming sealed and protected, falling again into the chronic group A certain percentage of the cases classed as acute perforations belong in this third group Perforations near the pylorus are apt to be accompanied by a considerable amount of inflammatory exudate and consequent narrowing of the pylorus In this group the leakage is often moderate and the condition of the patient relatively good, hence gastro-enterostomy can often safely be added to the immediate closure of the perforation The question as to whether gastro-enterostomy shall be done at the time of primary operation is an important one, and the indications laid down by Dr Sullivan express my views very well In the larger perforations of gastric ulcer with a good deal of immediate leakage I think it is usually unsafe to attempt to do a gastro-enterostomy, but in an ulcer near the pylorus or in duodenal ulcer with moderate leakage the operation tends to help toward the ultimate cure of the condition I have seen closure follow without gastro-enterostomy in one case of secondary perforation of a duodenal ulcer Dr Gibson states that the perforation itself tends to excite a reaction in an ulcer which aids in its ultimate healing and for that reason he thinks gastro-enterostomy is never indicated When the ulcer has perforated it is undoubtedly true that the acute reaction and inflammatory process around the ulcer tend to aid in its healing At the Roosevelt Hospital we had between 1910 and 1915 about 30 perforated ulcers, two thirds were duodenal ulcers, one third gastric In the duodenal cases we had no deaths from extension of the peritonitis, there were two deaths from complicating conditions In the gastric group there were many large perforations in the center of a large indurated area with excessive leakage and there were five deaths from extension of peritonitis which was present at the time of the original operation In the early part of our series comparatively few gastro enterostomies were done, but not so later In studying the results we believe that the gastro-enterostomy did not add to the immediate mortality if the cases were properly selected Early diagnosis and prompt operation are the keynotes of success We are all agreed that the patients who come under observation and are treated within the first twelve or fifteen hours almost invariably recover, while in many of the later cases death occurs from extension of the peritonitis

Dr John T Bottomley, *Boston* I do not agree with Dr Sullivan in the matter of doing away with drainage, even in early cases I have seen the pelvis full of a nasty, turbid, dangerous fluid one and a half hours after perforation of a small gastric ulcer With that fact in view it is in my opinion unsafe to do away with drainage in any case The placing of a drainage tube in the pelvis greatly increases the margin of safety We all vary in the degree of our resistance to infection and no man can measure that degree before operation and as a matter of safety I believe drainage should always be provided I disagree also as to giving a liberal diet shortly after operation I believe in keeping these patients on a low diet for a considerable time They are usually not awfully sick They recover quickly and there is no particular indication for liberal diet soon after operation

I think a search should be made in all cases of gastric ulcer for the source of infection We are coming to regard a large proportion of duodenal and gastric ulcers as an end result of infection in another portion of the body This should be sought for and if found should be eliminated

Dr. Harry D Johnson, New York Dr Sullivan's series of cases proves two things first, that the doctor who makes the diagnosis and refers the patient for operation is alive to the gravity of these cases, and second that he chooses his surgeon well. If we get these cases early when we are dealing with a peritonitis due to the irritative character of the stomach or duodenal contents all we have to do is to stop the leak and the alkaline secretions of the abdomen will neutralize the acid stomach secretion provided there has not been the supervention of a bacterial peritonitis At the end of twelve hours the picture changes—the chemical irritation has superimposed a bacterial invasion The important thing is the character of the rigidity They are so rigid that if you walk on their belly you would not sink in The question of liver dulness as a symptom is a delay in diagnosis That little bubble of fluid in the gastric angle is a late occurrence and should never be mentioned as a symptom of perforation of the stomach or duodenum

Dr Raymond Peter Sullivan Brooklyn The use of drainage in these cases is purely a matter of personal opinion I cannot say just when the peritonitis will be septic However, in dealing with early cases we assumed from the general condition of the patient and the appearance of the abdominal contents that the peritonitis present was chemical and hence limited our drainage as much as possible The results justified our action When these patients come to operation under ten hours after the onset of symptoms the abdominal cavity should be cleansed thoroughly by a sucking apparatus in preference to mopping with gauze Thus the adhesion band formation so apt to cause secondary obstruction will be lessened greatly I have never used the suprapubic drainage Our method has been to drain from the lower angle of the abdominal wound Counter drainage was used in only one case

It is just possible that in Boston the food may differ from what we eat in Brooklyn and hence they see more constantly the sign of "absence of liver dulness" We have never recorded this condition If it were present I consider it would be misleading, because so frequently a dilated colon will give modification of liver dulness Perforation may occur at any time If it occurs when the colon is loaded fermentation therein may lead to modification of liver dulness

PSEUDO-APPENDICITIS *

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In a recent clinic (June, 1915) Murphy says, "We surgeons are not talking enough about early operation in appendicitis" That, I take it, depends on the audience At such a gathering as this, one is justified in assuming that the question of acute appendicitis is settled, at least for the time being

The method and time of treatment, and postoperative measures are practically uniform, delay in proper treatment is usually due to uncertainty in diagnosis, and the inexcusable estimated general hospital mortality of 10 per cent is due to failure of some one to recognize well accepted principles of surgical diagnosis or treatment

The question of chronic appendicitis calls for attention, not because of a high mortality rate, but because of a rather disconcerting morbidity rate, a postoperative persistence of symptoms When a patient complains of the same symptoms after appendectomy as before the operation, there is sufficient reason for belief that the original symptoms were not caused by the appendix—that the treatment was based on an incorrect diagnosis The large and apparently increasing number of these cases calls for close attention and an analysis of all available data, in the hope of arriving at some more definite justification for making a diagnosis of "chronic appendicitis"

In gathering material for such an analysis, I have reviewed my cases of unsatisfactory results following removal of the appendix, but have excluded

A Acute cases

B Cases in which the appendix was removed during the course of an operation for other conditions

C Cases in which ordinary *sequelae of laparotomy* have occurred, such as hernia, ventral or inguinal, ileus, fistula, phlebitis, etc

After excluding the foregoing those remaining are unquestionably due to mistaken diagnosis and may be divided into

D Cases in which the true pathologic lesion, and proper diagnosis, has been demonstrated at a subsequent operation, or is reasonably evident, such as gastric and duodenal ulcer, cholecystitis, pancreatitis, lesions of the genito-urinary tract, and of the uterus and adnexa, tuberculosis, syphilis, malignancy, orthopedic conditions, and spinal cord lesions

E Cases to which I shall direct attention, namely, those in which the persistence of the symptoms has not been rationally explained, and which might well be termed pseudo-appendicitis

After excluding Classes A, B, C and D, I found between January, 1909, and January, 1916, records of eighty-seven cases in which the removal of the appendix, for chronic appendicitis, or interval operation for appendicitis, had not been followed by relief of symptoms, forty-eight of the eighty-seven patients were operated on by myself, 212 patients were operated on during this interval with such a diagnosis

Forty-eight in 212 cases seems a high percentage of unsatisfactory results, and it is because of this fact, coupled with the paucity of similar reports on remote results in the literature, that the present analysis has been made

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* Read before the Section on Surgery General and Abdominal at the Sixty Seventh Annual Session of the American Medical Association, Detroit June 1916

REVIEW OF CASES

A review of these cases reveals

Ages Between 10 and 15, four, 15 and 20, sixteen, 20 and 25, twenty-one, 25 and 30, twenty-two, 30 and 35, ten, 35 and 40, eight, 40 and 45, three, 45 and 50, two, 50 and 57, one

Sex Female, 73, male, 14

Civil State Married, 41, single, 46

Fat, 21, thin, 41

Duration of Symptoms Before Operation "Some weeks," 4, half year, 7, one year, 9, two years, 5, three years, 6, four years, 5, five years, 6, six years, 4, seven years, 3, eight years, 5, ten years, 3, "for years," 23

Number of Attacks One, 6, two, 4, three, 2, four, 2, five, 1, six, 6, "many," 19, "repeated," 11, "yearly," 8

Character of Pain "Continuous," 16, "severe attacks," 23, "mild attacks," 26

Tenderness, 25, rigidity, 9, hypersensitiveness, 39, side-ache, 20, burning sensation, 14, colic biliary, 9, renal, 5, lead, 1, ileac tumor, 8, acute ileus, 4

Location of Pain Right hypogastric, 10, epigastric, 20, umbilical, 8, right ileac, 37, left side, 7, "general abdominal," 14, lumbar, 8, "tender scar," 2

Gastric Symptoms Nausea, 52, vomiting, 24, "indigestion gas," 58

Temperature Elevated, 12 (two of these subsequently developed pulmonary tuberculosis), not elevated, 73 (subnormal temperature, frequent)

Bowel Movements Constipation, 54, diarrhea, 2, alternating diarrhea and constipation, 7, normal bowel movement, 24

General abdominal ptosis, 80

Skin Acne, 8, jaundice, 15, pigmentation, 12, hairy skin, 4

Urinary Symptoms Frequency, 16, suppression, 1, retention, 3

Uterine Symptoms Dysmenorrhea, 28; amenorrhea, 2, pregnancy, 5

Nervous Symptoms "Neurotic," 22, hysteria, 3, "spasms," 3, "fainting spells," 5, epilepsy, 1, aerophagia, 7

"Neuritis" of Arm, right, 12, left, 7, head, 3, breast, 4, foot, 1, painful heel, 2

Right sided pain on exertion, 42

Family History Similar trouble in mother, 5, father, 1, sister, 6, brother, 1

Lack of equilibrium between the vagus and the sympathetic divisions of the autonomic nervous systems is plainly evident in the majority of these cases

Miscellaneous Congenital dislocation of hip, 1, talipes equinovarus, 1, strabismus, 4, high palatine arch, 1, intestinal parasites, 4, inguinal hernia, 6, femoral hernia, 3, umbilical hernia, 12

Blood Examination in Seventeen Cases Hemoglobin from 60 to 70 per cent, 2, from 70 to 80 per cent, 3, from 80 to 90 per cent, 8, over 90 per cent, 4

Lymphocytosis, 5

Leukocytosis, none

Wassermann Reaction Negative, 12

Spinal Puncture in Twelve Cases Increased tension, 9, Wassermann negative, 12

Gastric Analysis in Twenty-Eight Cases Hydrochloric acid absent in 7 cases, increased in 10 cases, decreased in 5 cases, normal in 6 cases, stool, mucus in 9 cases

Roentgenoscopy in Twenty-Two Cases General abdominal ptosis, in all, double barreled ascending colon, 5, delay at terminal ileum with dilatation of cecum and ascending colon, 15, redundant sigmoid, 1

Histology of appendix showed nothing characteristic

Histology of glands showed simple inflammatory changes

Culture from glands, negative

Conditions Found at Primary Operation in Forty-Eight Cases Appendix "normal," 6, appendix large, swollen, tense, erect, congested, 4, small appendix, 7, small fibroid appendix, 12, appendicitis obliterans, 2, small fibroid appendix "with adhesions," 9, mucocele of appendix, 1, retrocecal appendix, 6, fecal concretions, 12, free abdominal fluid, 10, enlarged mesenteric glands, 9, Lane kink, 6, general abdominal ptosis, 12, cecum mobile, 17, pericolic membrane, 15, perisigmoiditis, 3, double barreled colon, 2, hepatic flexure absent, 2, omentum adherent to left round ligament, 1, megaduodenum, 1

Duration of Time After Operation Before Return of Symptoms Less than six months, 39, between six months and one year, 27, between one and two years, 8, between two and three years, 4, between three and four years, 1, between four and five years, 1, between eight and nine years, 1

Noteworthy Circumstances Which Preceded the Return of Symptoms Husband in bankruptcy two years after operation, 1, business, law suit two years after operation, 2, pulmonary tuberculosis one year after operation, 1, three years after operation, 1, traumatism to abdomen a few months after operation, 1, "fell down stairs" six months after operation, 1, operation on mother one year after operation, 1, sudden death of husband one and one-half years after operation, 1, pregnancy one year after operation, 1, five years after operation, 1

Conditions Found at Secondary Operation in Nineteen Cases Lane kink, 6, double barreled colon, 8, general abdominal ptosis, 11, cecum mobile, 12, cecal torsion, 1, omental adhesions, 3, pericolic membrane, 12, perienteritis (ileal), 1, cholecystitis (noncalculous), 4, mesenteric glands, 7, adhesions between ileum and colon, 1, megaduodenum, 1, "adhesions" absent at stump of appendix, 19

Secondary Operations By author, 19, by others, 8, pericolic membrane, division of, 12, cecopexy, 8, Lane kink, division of, 6, omental "adhesions," division of, 3, perisigmoiditis, division of, 1, colectomy, 3, enterostomy, 1, ileosigmoidostomy, 1, cecosigmoidostomy, 1, cholecystostomy for noncalculous cholecystitis, 3, dilatation and curettage, 2, tonsillectomy, 2, operation for kidney stone (no stone found), 3, nephrectomy, 1, exploratory laparotomy, 1, hysterectomy, 1, Coffey's hammock operation, 1, gastro-enterostomy, 1, "retroversion" of uterus and ovarian cyst, 1

Multiple Operations Three, 4, four, 1, five, 2, six, 1

Results of Secondary Operations Unknown, 2, improved, 9, unimproved, 15, death, 1

Results of Cases with No Secondary Operation Unknown, 8, improved, 16, unimproved, 36 In three striking instances there was sudden spontaneous unaccountable recovery of health after a prolonged period of disability following secondary and in one instance multiple operation Five improved after pregnancy

SUMMARY

These cases of pseudo-appendicitis were usually in young thin adults from 15 to 30 years of age, more common in females, and about equally divided between married and single

The duration of symptoms varied from "some weeks" to ten or more years The number of "attacks" varies between one and six to "many," some recurring at regularly stated intervals

The pain of attacks rarely put the patient to bed, though classed as "severe" in about one third and "mild" in one third of the cases The pain is frequently described as "continuous" or "side ache" and made worse by exertion Hypersensitiveness and tenderness are usual, and a "burning" sensation is frequent, but rigidity is not common

Pain is usually located in the right iliac fossa, though it may occur anywhere on the right side, or at the umbilicus

Tenderness at the scar of a previous operation is rare

Temperature elevation is uncommon, subnormal temperature frequent

Nausea is usual, vomiting rare, "indigestion" and "gas," frequent, with constipation present in two thirds of the cases

General abdominal ptosis is very common, iliac tumor, gas tumor, dilated cecum and gurgling in the right iliac fossa almost constant

Skin changes are variable, and urinary symptoms occasionally present

These patients are frequently spoken of as "neurotic" in the history, and complain of "neuritis" in various parts of the body, usually on the right side Goiter was present in a small proportion of cases

Blood examinations show leukocytosis absent, lymphocytosis rarely present, the Wassermann in the blood, negative

Spinal puncture in nine of twelve cases shows increased tension The Wassermann in the spinal fluid is negative in twelve cases

There was lack of hydrochloric acid in the stomach contents in one fourth of the cases examined

Mucus in the stool is not common

Roentgenoscopy shows ptosis, and delay at ileum or ascending colon

Sections of the appendix show nothing characteristic The recent report of Muschowitz is of interest in this connection

Mesenteric glands, on section show simple hyperplasia, and cultures from same are negative.

At primary operation in forty-eight cases the appendix was usually small, and with fecal concretions in one fourth of the cases

There was free fluid in the peritoneal cavity in one fifth of the cases and enlarged mesenteric lymph glands in one fifth of the cases

Ptosis, cecum mobile, Lane kink and pericolic membrane are not uncommon

The primary immediate result of operation is very satisfactory, but there is usually a return of symptoms within the first year

Trauma, pulmonary tuberculosis or "nervous shock" in some cases precede the return of symptoms

Findings at Secondary Operation (in Nineteen Cases) by the Author Adhesion of omentum or viscera to site of appendix is absent. 'Adhesions' are uncommon, ptosis, cecum mobile and various membranes are constantly present. Mesenteric lymph glands are found enlarged in one third of the cases

The remote results of various secondary operations are not encouraging in twenty-seven cases unknown, 2, improved, 9, unimproved 15 death, 1 In sixty cases in which operation was not performed a second time, the results were unknown, 8, improved, 16, unimproved, 36

CONCLUSIONS

The existence of such a clinical entity as "chronic appendicitis" has been questioned

Evidence presented shows that the diagnosis is often incorrect and is being made with unwarranted frequency

After eliminating all demonstrable pathologic conditions that might possibly be confused with "chronic appendicitis," there remains, in certain cases, some cause for pain in the right iliac fossa, other than the appendix, the exact cause of which is as yet not definitely known

Such cases of pseudo-appendicitis are frequently associated with visceral ptosis, constipation and neurasthenia

Appendicitis, either acute or chronic, or an appendix that has been the site of an unquestioned inflammation, calls for surgical treatment

Pseudo-appendicitis, on the contrary, is in no way related to the appendix, and is a nonsurgical condition in which appendectomy is contraindicated, hence the necessity of a differential diagnosis between these conditions

Every case of so-called chronic appendicitis that is associated with enteroptosis, constipation and symptoms of nervous instability should be looked on as pseudo-appendicitis until careful and painstaking study of the history and clinical findings prove it to be otherwise

In patients unwilling, or unable, to submit to this careful differential diagnosis, the good repute of surgery demands that the facts, as to this uncertainty in diagnosis, and hence in the result of treatment based on such diagnosis, should be frankly presented to the patient or responsible relatives

If it is then decided that the appendix shall be removed, the operation will be exploratory, a short cut to diagnosis, with the diagnosis and prognosis withheld until after the operation

The diagnosis of chronic appendicitis presupposes a previous attack of acute appendicitis

It is often impossible to determine the character of a previous attack of right sided abdominal pain, from the data available at a subsequent time, especially in view of the fact that cases of classical acute appendicitis with damage to the appendix, demonstrable at subsequent operation, are many times entirely free from all symptoms for long intervals

Hence the advisability of seeing the patient in one of these attacks, the characteristics of which may clear up the case

Cases characterized by more or less continuous discomfort in the right side of the abdomen, or of mild attacks of short duration, with brief intervals of relief, in which the pain is made worse by exertion and with relief on recumbency, associated with hypersensitiveness of skin and spasm of muscle, gas tumor, cecum mobile, gurgling, nausea but rarely vomiting, normal or subnormal temperature, no increase in leukocytes, constipation, enteroptosis, and evidence of vagus irritability, leading sometimes to chronic invalidism, are often pseudo-appendicitis and are not permanently relieved by removal of the appendix Such cases should, therefore, be given careful consideration before operative measures are instituted

An entirely satisfactory explanation of this state of affairs has not yet been presented, though intensive study suggests that a lack of balance between the vagus and sympathetic divisions of the autonomic nervous system may be an etiologic factor

This in turn may be due to abnormal function of some of the endocrine glands

Much is to be learned regarding this clinical syndrome, but in the meantime accumulating experience strongly suggests the desirability of emphasizing the fact that the diagnosis of chronic appendicitis calls for more justification than is often given it

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ABSTRACT OF DISCUSSION

Dr H A Black Pueblo Colo There are but few structures within the upper abdomen disease of which may not give rise to symptoms which resemble those of chronic appendicitis In chronic gastric disorders there is probably greater confusion than in any other condition within the abdomen as applied to chronic appendicitis In these cases the Roentgen ray the test meal even hemorrhage from the stomach, does not and should not convict that organ of ulcer The absence of pain and tenderness does not absolve the appendix from possible guilt Of course, these cases can usually be demonstrated by operation, but it is much more pleasant to confirm rather than to be confounded by our operative findings Pyloric spasm is probably the chief factor of confusion between chronic stomach disorders and chronic appendicitis Pyloric spasm is very common in chronic appendicular disease especially that form known as the obliterative type of appendix Given a case of chronic peptic ulcer versus chronic appendicitis there is required skilled surgical diagnostic ability as well as a very high degree of judicial temperament The pyloric spasm will often confuse the

Roentgen-ray findings, not infrequently it accounts for hematemesis and I believe it is probably the direct cause of so-called "hypersecretion" through retention of the natural gastric secretions, rather than that the glands of the stomach have actually produced an abnormal amount—a hyperretention rather than a hyperproduction. I would apply the same reasoning to the condition of hyperacidity when encountered in connection with pyloric spasm, for the contraction *not* only retains the secretion within the stomach but also prevents the regurgitation of the intestinal secretion which normally takes place and to a normal degree lessens the acidity of the stomach contents.

Dr. Ernest Laplace, Philadelphia: Long before the days of appendicitis we heard of trouble in the right iliac region called typhlitis. In fact most right iliac conditions were referred to the cecum. We now know that these troubles start generally in the appendix. As a result the cecum is now almost forgotten. At the beginning of the colon there are two pouches, one the appendix and the other the cecum. As the appendix can receive and retain intestinal contents, we have entirely neglected the cecum which receives and may retain, beyond the proper time, intestinal contents subject to all decompositions. Now the cecum is coming back into its own. When we operate and find the appendix and remove it because there is trouble there, we have possibly overlooked the real seat of the trouble, the cecum, and there may be, probably there is, a chronic form of transudation of toxins through the cecum which leaves no apparent trace of itself. We know that in cases of so-called recovery after a phlebitis on the left side, the insidious poison may have traveled from the right side to the left and we must conclude that there are toxins which leave no trace behind. It would seem that decompositions take place in the cecum which do not result in the necessary irritation which produces bands and adhesions and so on, but which does produce a neurasthenia which precedes or follows the enteroptosis, etc. I wish to make a plea against the very small incision in cases of appendicitis. We must explore. Because pain is there we must not conclude that it is due to the appendix only. The whole region should be examined in order to fulfil the indication and not allow a neighboring lesion to pass unnoticed.

Dr. M. Howard Fussell, Philadelphia: Dr. Connell advises what many of us cannot do, to differentiate between those cases which do not show any pathology and the actual cases of appendicitis giving rise to pain in the right iliac fossa. The reasons for this difficulty in diagnosis are appendix, gallbladder and gallduct disease, stomach conditions, kidney conditions and so on often are difficult and sometimes impossible to differentiate from true or apparent appendicitis. Now as he has suggested that all the pseudo cases, as he calls them, that is, all these cases of pain in the right iliac fossa which are *not* due to an inflammatory condition are frequently accompanied by splanchnoptosis and also practically all of the individuals, man or woman, are neurasthenic. The question of treatment is the great point. What shall be done in these cases? From the medical standpoint all such cases where the diagnosis of appendicitis or other abdominal inflammatory conditions is questionable or where it is fairly well shown that there is no inflammatory condition should be put on a diet which will fatten them, on rest that will keep them out of the turmoil of society, and a vast majority will clear up under that sort of treatment, but there still remains a certain proportion which does not clear up under such conditions. Tell the patient you are in doubt about the diagnosis. If you are a surgeon tell the man who sent you the patient that you are in doubt about the diagnosis, but the safest thing to do is to make an exploratory operation because with all our careful diagnoses there are a number of cases of inflammatory conditions which do give rise to pain in the right iliac fossa without the usual physical signs. It is a great deal better to open the abdomen and find nothing than to allow an old gallstone or a diseased appendix to remain with a possible serious result.

Progress of the Mind.—The march of the human mind is slow.—Edmund Burke.

PLASTIC AND RECONSTRUCTIVE SURGERY *

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Modern surgery is so vast a subject that no man can master it in all its branches. For this reason it has been necessary from time to time to separate, from general surgery, special branches which demanded special training, and better facilities for their full development. After a number of years' experience in plastic surgery I feel that the time has come for the separation of this branch from the general surgical tree.

The object of this paper is to advocate the special development and teaching of plastic and reconstructive surgery by those interested in it and trained for it.

I have heard many busy general surgeons say, "I do not like to do plastic cases, as they take too much time and require so much attention." These men will welcome the advent of the surgeon who is willing to devote his time to plastic work.

By plastic and reconstructive surgery I mean that branch of surgery which is distinctly formative or reparative. It deals with the repair of defects and malformations, either congenital or acquired, and with the restoration of function and improvement of appearance. This is accomplished chiefly by the transfer of tissue, either from the immediate neighborhood or from some distant part.

The deformities dealt with in plastic surgery for the most part involve the skin or adjacent soft parts, rather than the bones and joints, the ligaments or tendons.

The healing of large denuded surfaces, and of intractable wounds, should also come under the care of the plastic surgeon. The field of plastic surgery is a broad one, the cases are numerous, and of varied types.

Orthopedic and plastic surgery approach each other quite closely in certain cases, but my experience has been that the orthopedic surgeon is glad to turn the plastic cases over to the plastic surgeon, and vice versa.

There is no single group of surgical cases which are more consistently "botched" than those requiring plastic and reconstructive surgery.

Plastic surgery is done by nearly every general surgeon in his routine work, and is often attempted by eye, ear, nose and throat specialists, and by those physicians who "operate only occasionally." I do not believe that it should be done as a routine by any one of these groups of operators.

It is well known that if any surgeon is interested in a special line of work, and gives his attention to it, he will in time be able to do this work better than the one who operates in these cases only occasionally.

It is imperative that the surgeon who expects to do plastic and reconstructive work should have a thorough general surgical training before attempting to specialize in this branch. Above all he must know, and thoroughly appreciate, the principles covered in the healing of tissues, and in the repair of wounds.

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* Read before the Section on Surgery, General and Abdominal at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

A special knowledge of the resistance and utility of tissues more or less infiltrated with scar tissue is also necessary, as in many instances normal tissue is unavailable A knowledge of the surgical handling of children is very important

Thorough familiarity with the free transplantation of skin, fat, fascia, bone and cartilage is essential, as all of these tissues are constantly utilized in reconstructive work The principles of tissue shifting, and of the use of pedunculated flaps, must be understood, and also the possibilities of combinations with the above mentioned free transplants An accurate estimate of immediate and subsequent tissue shrinkage must be planned for

This work should not be undertaken unless one has a definite aptitude for it A certain amount of imagination is also a very helpful adjunct

To sum up the whole matter, in the words of Sir Frederick Treves,[1] "No branch of operative surgery demands more ingenuity, more patience, more forethought, or more attention to detail"

My experience has been that we seldom, if ever, find two plastic cases exactly alike, and thus no "cut and dried" methods can be employed This endless variety in itself brings a certain fascination to the operative treatment, and to the after-care of these patients

Each case requiring a reconstructive or plastic operation should be carefully studied, and the various methods of repair considered from every standpoint

Keen surgical judgment is often necessary to determine what should be done, whether or not a plastic procedure should be finished at one operation, how far to go in the initial operation, and when to follow with the secondary procedures

The results in certain groups of cases are very slow, and in these the process is one of gradual building up, in such cases the entire series of operations should be planned with regard to the ultimate result, and not to the immediate relief of the condition For example, in some instances I have been able to gain only a fraction of an inch at a time in shifting flaps where the blood supply was doubtful

The postoperative treatment and dressings should be done by the surgeon himself, or directly under his eye, as successful results in a great measure depend on skilful and judicious after-treatment

I am sure that all of us have seen patients with severe contractures following burns operated on in various clinics, with the result that at the completion of the operation the patient presented a perfectly sutured wound rivaling in appearance the schematic figures in the textbooks, and yet if these cases are followed in the wards, it is not uncommon to find that the beautifully sutured flaps, in which all the available material for repair has been used, have sloughed Here, then, not only has the original condition not been bettered, but there has been superadded a disadvantage to the patient, and to the surgeon to whom he may drift later, that all the material useful for the repair has been wasted, and a longer and more tedious process has to be undertaken, with less likelihood of a good result

In so many published reports of plastic cases, especially on the face, one is struck by the fact that while the original condition may have been rectified, the scar left by shifting a flap is as disfiguring as the original defect or even more so Such a result, in many instances, shows poor judgment on the part of the operator, as the aim of the plastic surgeon must always be to repair the deformity with the least possible scarring of the surrounding tissues

The purpose of surgical intervention in any branch of surgery should always be the cure of the patient The primary consideration, first, last and all the time, must be the patient This fact is sometimes lost sight of in the desire to operate

If a patient with a certain type of lesion requiring surgical treatment comes to a surgeon who has not had special experience in the operative treatment of that particular trouble, it is the duty of that surgeon to refer the patient to some colleague who is known to be skilled in that treatment This may not be "good business," but it is certainly for the best interest of the patient, and furthers true efficiency

In reconstructive surgery on the jaws and palate, the plastic surgeon should have the cooperation of a skilled dental surgeon This combination has proved to be of inestimable value in France, and also in Germany, where the attempt has been made to concentrate as far as possible in certain hospitals those of the wounded who require reconstructive work on the face

The plastic surgeon, with his special knowledge of tissue transplantation, can be of great use to the general surgeon and to the orthopedic surgeon in repairing the defects left by certain necessarily mutilating operations This also applies to the gynecologist and genito-urinary surgeons, when called on to perform more extensive transplantations than these surgeons are accustomed to undertake

The aim of the plastic surgeon is the relief of pain and deformity, the restoration of function, and, last but not least, of the ability to earn a living

One occasionally hears the term "beauty doctor" applied to those doing plastic surgery Although this term may have some foundation, as a matter of fact a very small part of legitimate plastic surgery is done for cosmetic reasons only A number of patients have been under my care who previously were unable to secure even the humblest position on account of hideous facial deformities, and who, having been rendered presentable by a series of plastic operations, are now making a good living If this is being a "beauty doctor," the title is worth while

The tendency of modern surgery is toward increased efficiency, and anything that will improve results and advance the knowledge of surgical treatment should be given every possible opportunity for development

It is only within the last few years that the surgeons especially interested in orthopedic surgery, in genito-urinary surgery or in cranial and nerve surgery have been allowed the necessary freedom required for development, and every one knows the wonderful advance which has been made in these branches

In answer to the objection in certain clinics to any further splitting of the general surgical service, the following quotation may be of interest

> The problem of establishing special surgical services in large general hospitals is always difficult, on account of the inevitable and natural feeling on the part of the general surgeons that such a procedure takes from them opportunities which are legitimately theirs At the same time it is imperative that such services should be established, on account of the best interest of the patient, of medical education and of those surgeons who are devoting their time ,

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[1] Treves, Sir Frederick Manual of Operative Surgery, ii 104

and energy to the acquirement of expert skill in special branches of surgery[2]

Any progress in any subdivision of a general surgical service redounds to the credit of the whole surgical service, as well as to the special branch in which the advance is made This fact is occasionally forgotten

After this brief outline of the subject the question arises, Is the field of plastic surgery large enough and interesting enough to justify a surgeon in specializing in it? For myself I can answer unqualifiedly that it is Furthermore, I believe that it is only a matter of time, and that the time is rapidly approaching when there will be created in every large surgical clinic a department of plastic and reconstructive surgery, under men especially fitted and trained for this work Which clinic will be the pioneer in putting this important branch of surgery on an efficient and progressive basis?

ABSTRACT OF DISCUSSION

Dr Emery Marvel, Atlantic City, N J Dr Davis's successes are due to his perfect technic, which ingrafting demands The general surgeon relaxes and in many cases, perhaps, does not fulfil his whole duty A man whose colon had been removed for malignancy and who was subsequently roentgenized, found himself with extreme destruction of the abdominal wall The condition was so severe that he was incapacitated, but he refused operative procedures From the anterior superior spine on the left to the anterior superior spine on the right below and the costal margin on the right to 2 inches above the costal margin on the left was a window, including the skin, the fascia, and the right rectus muscle Dr Davis covered these immense areas with skin grafts and when I saw the man afterward, the epithelial repair was nearly complete and after six weeks the defect was entirely closed The testimony is as to the extreme area in which successful skin grafting has been obtained The average surgeon would not give sufficient time and attention to this work, hence it should be done by the specialist or one who has the patience for such a tedious procedure

Dr James Savage Stone, Boston No branch of surgery requires more patience and detailed attention than plastic work It requires also a very broad knowledge of the underlying principles of general surgery There are two great groups of plastic work The first deals with the various congenital malformations and defects, the second, with the results of trauma In dealing with the congenital malformations there must be a thorough knowledge of the surgery of children and any one who undertakes the surgery of children must of necessity be able to treat well the various congenital defects, among which hare-lip and cleft palate occupy conspicuous places A knowledge of the laws of growth is essential, especially of the growth of bone Not only must we take account of the normal epiphyseal growth of bone, but also of the fact that bone grows to meet the demands that are put on it There is no more striking example of this than the growth of a fibula which is transplanted to take the place of a lost tibia This is a fortunate example of what nature can do to help the surgeon The cessation of growth of the bones of the upper jaw and of the central part of the face may be a most unfortunate result of unwise operative interference with growing bone in operations for cleft palate All these principles and many others must be understood in work with children

Within the next few years there is going to be an immense amount of reparative work as the result of the war in Europe Today the wounded men are constantly going back from the battlefields to the different hospitals in the big cities When their primary wounds have healed so that they have become fit subjects for reparative work, and when the surgeons who now are more than occupied with the urgent life saving measures are more free, then the immense opportunities for reconstructive work will give those interested in this branch wonderful chances for study and teaching Reparative surgery will become a part of the general medical preparedness of which we hear so much now The immense amount of work to be done, and the facilities for study and teaching will give to plastic surgery an even more important position than that it now holds

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[2] Surgical Specialties in Hospitals, editorial, Boston Med and Surg Jour, Dec 2, 1915, p 859

CONJUGAL PARESIS

REPORT OF A CASE *

H H DRYSDALE, M D

CLEVELAND

Paresis (dementia paralytica, general paralysis of the insane) is a progressive, chronic and incurable malady possessing a highly characteristic symptomatology which concerns the motor and psychic functions It eventually annihilates intelligence, disrupts the personality and chooses for its victims vigorously constituted individuals who have not previously been afflicted with mental disease The sole cause is syphilis

At the onset, the alterations in the psychic life may occur so insidiously as to be practically unnoticed by friends and relatives A skilled observer, however, even in the absence of physical manifestations, will readily interpret such early signs as failing attention, sluggishness of thought, dampened perceptive acuity, tiresome reiteration, unmotivated gaiety, erratic conduct, etc, as forerunners of this disastrous disease

In not a few cases the first warning may appear with the ferocity and unexpectedness of an earthquake—an actual mental cataclysm When the disease is ushered in so acutely, the patient is apt to run amuck and give way to violent impulsions Often a history of recent alcoholism complicates the situation A serologic investigation of the blood and spinal fluid will, of course, make the differentiation

The disease, irrespective of the mode of onset, pursues a more or less irregular course which culminates eventually in a state of permanent dementia—that final wreckage of mind which permits of no opportunity for salvage

In early years, paresis was pictured as an organic brain disease which had for its early manifestations grandiose ideas and extravagance of conduct With the advent of the Wassermann era and the newly acquired knowledge and improved diagnostic methods which resulted, it became evident that many cases were improperly classified because the individual had not at some time exhibited symptoms of exaltation and grandeur Today our interpretation of the malady has greatly changed, and it is now customary to recognize three clinical types, namely, the exalted, the hypochondriac and the demential The exalted and hypochondriac forms are encountered more frequently among the professional and cultured classes, the demential type appears to predominate in women and among those of the poorer classes

The course of the disease, while progressive, is subject to remissions which have always proved deceptive to the unknowing These periods of arrest of symptoms may last for months, and in a few cases for several years Many patients during these "temporary respites" cherish the belief that a genuine convalescence is at hand, and are often permitted to return to business and look after their personal affairs This, at best, is always a dangerous procedure, as remissions may end abruptly, and if the unfortunate victim is not properly safeguarded, he may dissipate his funds or indulge in conduct which might prove troublesome and costly

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* Read before the Section on Nervous and Mental Diseases at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June, 1916

Leading serologists are quite agreed that paresis continues to be a hopeless and incurable affliction Long continued investigations have disclosed the interesting information that the central nervous system, in these cases, is structurally damaged soon after the invasion of syphilis, and usually years before a physician is consulted If this is true, the prospect of obtaining a cure for this tragic disturbance is certainly dark Yet there are some among us who, in spite of the best information on the subject, have become "specific therapeutic enthusiasts," so to speak, and are subjecting well established cases of paresis, under the guise of cerebral syphilis, to intensive salvarsan therapy, and are interpreting ordinary remissions as evidence of their curative skill Apparently these "alleged" cures are not long lived, as it is becoming quite a commonplace experience to examine patients in an advanced stage of the disease who had just previously passed through an ordinary remission following a course of intravenous or intraspinal medication

Convulsive seizures occur in fully 60 per cent of general paralytics It may happen that the symptoms hitherto slight may become greatly intensified after a convulsion In other instances, the subsidence of a seizure may mark the beginning of a remission

The disease confines itself largely to the male sex in the proportion of about 9 1, and makes its appearance usually when the individual is in his prime The average age of onset is 40 years, and the period of time that intervenes between the infection of syphilis and the development of paresis ranges from two to twenty-five years Not more than 50 per cent of the patients admit syphilis, or are aware of having contracted it Ten per cent of patients admitted to state hospitals are afflicted with dementia paralytica

Hereditary syphilis may also lay the foundation for paresis, and it is apparently the usual cause of the infantile or juvenile forms of the disease Reports of over 100 such cases have been collected

Fortunately not every syphilitic becomes a paretic In fact there are in some countries much syphilis but little paresis In Algiers, for instance, where fully 60 per cent of the natives are syphilitic, progressive dementia is a rarity The disease, therefore, requires other elements to bring out its development, and to cover this point, von Krafft-Ebing coined the now famous phrase "civilization and syphilization" Perhaps it may prove, as in the case of malaria, that certain strains or species of the micro-organisms are the true cause of the disease

Paresis has been observed in a case of a mother and child (Hoch) and in brothers (Collins, Oppenheim) The case of two brothers reported by Collins of New York is especially interesting, as the two boys attended college at the same time, and both have been suspected of contracting syphilis from the same source Husband and wife may also become afflicted, and it is this phase of the disease which constitutes the subject of my thesis

If the literature on the subject is a criterion, paresis appearing during the lifetime of both husband and wife is an extremely rare condition

The "Index Catalogue of the Library of the Surgeon-General's Office, United States Army," makes no direct reference to any cases which may have occurred in the United States, but it does have a record of a few cases which have been reported in foreign periodicals These, briefly, are as follows

CASES IN THE LITERATURE

Laignel-Lavastine and Mercier presented the following case to the Society of Psychiatry in Paris, Nov 21, 1912

The wife, aged 39, an actress, had impairment of memory, megalomania, dementia, tremors of hands and lips, dysarthria and fixed pupils Serologic examination disclosed a positive Wassermann reaction on the spinal fluid with increase of albumin and lymphocytosis

The husband aged 27, had less marked symptoms Memory was not impaired, but there was a decided change in personality Reflexes were responsive except the pupils, which were contracted and immovable Dysarthria prevailed, and leukoplasia of the corners of the mouth was noted The spinal fluid showed an increased albumin content, and the Wassermann reaction was positive

These authors express the view that conjugal paresis is not altogether uncommon, but that few cases are reported because the symptoms do not develop in the husband and wife at the same time

Ferenczi[1] publishes the report of a case of dementia paralytica in a man and cerebral syphilis in the wife Both denied having ever contracted syphilis, and no clinical lesions were found in either patient

The husband, aged 44 presented pronounced dementia, incoherency of speech and action, exaltation, rhombergism, and exaggerated deep reflexes

The wife aged 44 suffered with paralysis of the motor oculi nerve of the left eye and paresis of the facial musculature The case was reported prior to the Wassermann era, and the author inferred that because the wife was syphilitic the husband also must have contracted the disease

Garnier and Sautenoise[2] state that the object of their communication is to point out that syphilis is the cause of paresis, and they cite a case of a man and wife The husband was syphilitic for twelve years and the wife for ten years Both developed paresis and both were the offspring of psychopathic progenitors

Sipocz[3] reports three cases of conjugal paresis and one of taboparesis occurring during his eleven years' service in the psychopathic clinic in Budapest

Junius and Arndt[4] have collected among several thousand cases of paresis and tabes in the Anshalt-Dalldorf, during a period of twenty-five years, thirty-eight cases among man and wife In seven cases, six men had paresis and one wife tabes, in one case vice versa One man was married twice He too was a paretic With his first wife he had one daughter who developed paresis at the age of 24 The wife finally became tabetic The second wife was delivered of two stillborn children, and she also developed tabes

AUTHOR'S CASE

The case which I report concerns a man and wife, both of whom are living and inmates of the same institution Both are afflicted with paresis, which now is in the terminal or advanced stage

THE HUSBAND

G L, German aged 40, a paper ruler by occupation, was first examined, Sept 1 1913, in consultation with his physician, Dr John Neuberger The patient was a man of moderate stature but poorly nourished, and was somewhat emaciated His ancestral history proved negative so far as his present condition was concerned No inherited psychopathic taint was disclosed His father died of pulmonary tuberculosis at the age of 62 His mother and one brother died of organic heart disease, the former at the age of 52 and the latter at the age of 43 Two brothers and one sister are alive and well The patient was the youngest of a family of five children As a lad he was healthy and robust He attended public school until he was 15 Then he went to work as a book binder and later as a paper ruler He was a hard working, thrifty and industrious man and was considered healthy and strong At the age of 27 he married

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[1] Ferenczi A Budapest Konyl Aerzte Gesellsc 1903, xvi

[2] Garnier S and Sautenoise A Reflections on a Case of Conjugal Paresis of Syphilitic Origin Arch neurol 1905 xix 110

[3] Sipocz G Orvosi hetil 1908

[4] Junius Paul and Arndt Max Monatschr f Psychiat u Neurol 1908 xxiv 10

In July, 1913, his wife noticed an unaccountable change in his temperament In health he was reserved but most indulgent, affectionate and thoughtful Now he was hateful, indifferent, and wished to be left alone The condition was regarded as a "nervous breakdown" by his relatives Sept 1, 1913, he was obliged to give up his work, being no longer able to apply himself, and making many mistakes His employers urged him to take a prolonged rest This seemed to distress him, and he became quite agitated and disturbed For hours he would hold his head in his hands and constantly bemoan his fate He could not sleep, he walked the floor at night, and finally the wife came to realize the seriousness of the situation

The physical examination disclosed total abolition of the patellar reflexes, tremors of the closed eyelids and separated fingers, fixed and contracted pupils, dysarthria, instability of gait and moderate emaciation Mentally he was confused and distinctly apprehensive Many of his answers were incoherent, and he was suspicious of his family His wife's well intentioned solicitations were angrily repulsed, and he insisted that she leave the room During her absence he voluntarily told us of having contracted syphilis in 1898 He consulted a physician, and soon thereafter considered himself cured, as all symptoms had rapidly disappeared Two years afterward, 1900, he married, and finally came face to face with the cold truth that a cure was most unlikely, and that there was great danger of his having transmitted the disease to his wife and child He further stated that he had carried his "secret" single handed during all these years, and had been hoping against hope that no harm had resulted from his folly and indiscretion

A provisional diagnosis of dementia paralytica was made, and a specimen of his blood obtained for serologic investigation Before this was completed, the patient became quite disturbed and boisterously incoherent He could not be quieted, and assumed threatening attitudes toward the members of his immediate family Sept 4, 1913, it was necessary to arrange for his commitment to the Cleveland State Hospital The result of the Wassermann test was finally reported as positive, four plus

Since his admission to the institution the disease has pursued a progressive course with few slight remissions At various times he has suffered with convulsive seizures, some of which were quite severe and prolonged He is now markedly demented, stupid, untidy, resistive and partially bedridden

The diagnosis is dementia paralytica (paresis) The Wassermann reaction is blood, plus four, spinal fluid, plus four The cell count is 28

THE WIFE

H L, a native of Ohio, aged 36, consulted me a short time following her husband's adjudication Both her grandparents died of senility Her father died of a complication of diseases, aged 50 One sister died of chorea, aged 30 Her mother and one sister are living and well All the members of the family, including herself, were unmistakably neurotic She suffered the usual diseases of childhood but developed normally At school she was active and alert, but not especially vigorous or robust Menstruation first appeared at the age of 13 and has since been normal At the age of 23 she married The family life was all that could be desired, and the man was at all times a devoted husband and father She had known him from early childhood, and had every reason to believe that his habits were exemplary, in no manner was he given to excesses The patient further informed me that she suffered a miscarriage shortly after her marriage which necessitated a curettement of the uterus An uneventful recovery followed

At this point I suggested to her the advisability of submitting to a thorough examination, but this she deemed wholly useless as her health was good It was then explained that her husband was afflicted with a specific disease, and it was most essential to determine whether or not the disease had been transmitted to her She refused to consent, and left the office apparently under the impression that I was mistaken in considering her husband's condition incurable It was also evident that she questioned the cause of his invalidism

I saw nothing more of this woman until May, 1915, when she returned complaining of nervousness, insomnia and numbness in both lower extremities She had been visiting her husband regularly at the hospital, and this had greatly depressed her His condition had grown gradually worse, and he was now a patient in the "infirm" ward A specimen of her blood was secured for serologic investigation, and this disclosed a positive reaction for syphilis Treatment, however, was still refused, in fact, she assumed an attitude of total indifference, and declared that she no longer cared what became of her, as there was nothing left to live for

Two months afterward, July, 1915, I was summoned to her home and found her quite excitable, erotic and rambling in her talk The pupils were contracted and fixed, the left patellar reflex abolished, the gait quite ataxic, and considerable dysarthria prevailed She had no recollection of what had transpired the day before, and seemingly had no insight into her condition Specific medication was pushed, and in a short while all mental manifestations abated and she was quite herself again Her regular visits to her husband were resumed, and she invariably insisted on making the journey alone

From this time on her conduct was noticeably irregular, and she became ill at ease with those who were near and dear to her She neglected her daughter, avoided meeting people, and lost much of her former pride and neatness of appearance Oct 14, 1915, I received a message stating that the patient was found wandering about the hospital grounds, and requested that the family be notified Arrangements were made for her return to the home, where I saw her the following morning I hardly knew her when I called, as she had lost much in weight, and was profoundly confused and incoherent During the afternoon she became quite maniacal, and the relatives, finding themselves unable to cope with the situation, took the necessary steps for her commitment to the Cleveland State Hospital

According to the hospital records the progress of the disease has been exceedingly rapid, and at present she is almost as deeply demented as her husband who was admitted two years previously

The diagnosis is dementia paralytica The Wassermann reaction is blood, four plus, spinal fluid, four plus The cell count is 30

THE CHILD

In November, 1915, I had an opportunity of examining the daughter, who was then 8 years of age She was of slender stature and poorly nourished She told me that she felt well and was progressing nicely at school Her aunt, who accompanied her, intimated that she was subject to "colds" and had periods when her appetite was poor She had never been seriously ill, however, and had exhibited no signs of nervousness

The clinical examination was practically negative, and no objective neurologic manifestations were elicited Her mentation was normal, her memory was faithful, her attention good, and her ideas were expressed coherently and connectedly Temperamentally she was quiet and reserved The special senses were intact and the eyegrounds were negative A specimen of her blood was submitted to a Wassermann test, and this was found to be positive for syphilis

The condition of the child has been made known to the relatives, and the responsibility of her future care now rests with them

COMMENT

This case presents some very interesting features The father and mother are now hopeless invalids as the result of the ravages of syphilis Their only daughter has inherited the disease, and no one can prophesy what her future health will be The husband contracted syphilis two years prior to his marriage The symptoms were slight and quickly subsided after a brief period of treatment Eighteen years of syphilis preceded the development of paresis in his case

Unquestionably he infected his wife, but just when no one can say She did, however, become a paretic two years after her husband, who was syphilitic two years before they were married It would be interesting in this connection to know if the number of years of syphilis preceding the appearance of paresis was the same in husband and wife

The disease in both cases was of the demential type, and at no time during my observation were there any signs of exaltation or grandeur

According to the literature, cases of conjugal paresis are rare, but it has seemed to me that members of this section whose experience has been more extensive than my own must surely have encountered conditions of this sort

Rose Building

ABSTRACT OF DISCUSSION

Dr **Julius Grinker**, Chicago This report brings up a number of reflections on the subject of syphilis and parasyphilis Many of the ideas in connection with this subject are still hypothetical and in need of further proof However, clinical reports such as this one seem to throw some light on the problem For instance, why should the wife contract general paresis and not tabes? It appears as though there might be a special strain of these spirochetes which produce a certain nervous disorder of the tertiary or of the quarternary or, as it is now called, the parenchymatous type of syphilis of the nervous system This fact was very strongly brought to my mind when in 1903 I had occasion to study an entire family of syphilitics, most of whom, with one exception, had developed parasyphilis, this exception was the father, who died too young to develop any form of nerve syphilis and whom I had not examined

The case was this A man who had contracted syphilis married a woman who had previously been married and as a result of her first marriage had had a healthy son, who later had a healthy family The first result of this second marriage was the birth of a boy, who early developed normally, attended college, and later entered a countinghouse, doing work satisfactorily At about 19 years of age he developed juvenile paresis and died The second child, a daughter, had all the evidences of hereditary syphilis on her body, snuffles and Hutchinson's teeth but went on to womanhood and then developed an attack of right-sided hemiplegia with aphasia and in addition was the subject of a gummatous meningitis, as I determined on postmortem examination The third offspring, a boy, developed symptoms of tabes early, with incontinence of urine and the peculiar difficulties that go with hereditary juvenile tabes, until at 19 there appeared an optic atrophy, causing total blindness, but very little ataxia So slight was the ataxia that the patient could easily find his way through Chicago's busy thoroughfares, having made his living by peddling newspapers The mother developed optic atrophy and tabes There is no doubt that all had contracted the disease from the father

It seems to me that the family tendency may have less to do with the variety syphilis will assume than the fact that there are different strains of one and the same organism In consequence, we are beginning to believe that there are several strains of spirochetes, and the case reported by Dr Drysdale would tend to support that theory Referring to our new treatment of syphilis and whether intravenous salvarsan injections or intracranial injections are preferable to the old method of administering mercury and iodids, only time and more experience will decide

Dr **John Matthew Pulliam**, Fort Wayne, Ind I have under observation at present a man who contracted syphilis twenty years ago He is not married, but has had relations with a woman and presumably they have a child This man is paretic, he is now undergoing a remission The woman is paretic, and the daughter, now 17 years old, is paretic The mother thinks the child is by this man, but is not certain In regard to the spirochetes, I do not know that it is a question of strains Tuberculosis manifests itself in many different forms tuberculosis of the lungs, of the glands, and of the bones So why could not syphilis affect the brain in a certain individual, in another individual of that family attack the cord and so on down the line? We could have any part of the body affected and perhaps at the point of least resistance I think this idea would be more logical than to say that there are different strains of the particular organism I presume there are, and yet the disease might attack a point of least resistance where the conditions were more favorable to the spirochetes than in any other locality

Dr **Lawson G Lowrey**, Hathorne, Mass We have had in the state hospital three members of one family, father, mother and daughter The mother developed paresis first, then the father, and then the daughter came to us, not for paresis or any syphilitic disorder, but because of what appeared to be a state of manic depressive insanity She, however, had a positive blood Wassermann The mother eventually died and necropsy substantiated the diagnosis of paresis The father and daughter are still in hospitals, but have been transferred The father is of excitable type, and it is rather common that people of this class live longer than the more quiet ones As to whether or not the nervous system is the locus of minor resistance, or whether different strains of spirochetes operate to produce paresis, there is evidence in both directions It is a problem that must be solved experimentally, one on which a considerable amount of experimental work is now being done, and I believe that at the end of three years we shall know more about the subject than we do today

Dr **C C Burlingame**, South Manchester, Conn In view of the work reported by Reasoner, it would seem that there is little doubt as to the existence of distinct strains of the organism Dr Reasoner took some twenty strains of the organism and experimentally produced syphilis in rabbits He found, say, that Strain No 5 produced a certain lesion of the eye, Strain No 10 no matter how frequently repeated, never produced those symptoms of the eye In brief, he has taken certain strains of the spirochetes and produced certain definite lesions which could not be produced with other strains of the organism

Dr **David S Booth**, St Louis There came under my observation a family consisting of a wife and her two husbands, which I wish to report briefly since I do not know how much may have been sequence and how much coincidence I was brought into the family to examine the second husband, making a diagnosis of paresis, when I learned that the first husband had been confined for the same disease and had committed suicide in the insane asylum The second husband was committed to the asylum, and several years after, the wife was also committed to the hospital in the same condition And one of these two committed suicide, I do not remember which

Dr **William Ravine**, Cincinnati In 1912 I saw a woman brought into the Anton Clinic at Halle a S, in a state of depression with the physical and serologic findings of paresis About 15 years before her admission to the clinic her husband was brought in with the diagnosis of paresis, he was sent to the state insane asylum and died of paresis This woman married two years after the death of her first husband, and eight years later her second husband developed signs of paresis, was brought into the clinic, and subsequently sent to the asylum He was still alive on her admission Permission was obtained for the performance of brain puncture of husband and wife, and the typical lesions were produced in the eyes and testes of rabbits In a recent study of about 75 children of paretics, I was astonished to find that but one child showed evidences of hereditary syphilis, and but two gave positive Wassermann reactions in the blood, spinal punctures were not made

Dr W F Lorenz, Mendota, Wis We make it a practice to examine relatives of paretics in the Mendota and Northern Hospitals A large number of children have been examined, and less than five per cent have shown a positive Wassermann As a rule, they appear normal and bright, and, in fact, most of them are healthy and good-looking

Dr Charles R Ball, St Paul I recently had under my care the daughter of a paretic, age 17 The Wassermann test was negative On two occasions the luetin test has been positive This young woman is extremely nervous and errotic and seems absolutely devoid of any moral sense or responsibility so that at the present time she has to be watched constantly She is extremely immoral and does not hesitate to steal or forge checks, and when confronted with her misdeeds manifests no sense of shame or remorse There is no doubt but her moral void is an effect of the syphilis of her father She might be properly classified under the cerebral palsies The difference is simply one of localization, in this case the moral zone was damaged instead of the motor

Dr George H Moody, San Antonio, Tex For many years I have been observing children of paretics rather closely and have made Wassermanns on some of them This observation leads me to believe that children of syphilitic parents whose syphilis has existed for a long time are much more likely to appear normal and not so prone to present degenerative signs of hereditary syphilis as are those children whose parents have recently contracted syphilis, indicating that if an individual has had syphilis perhaps the time elapsing since contraction of the disease is the most important element in modifying the severity of the infection

Dr S G Burnett, Kansas City I have as patients four brothers, each having paresis, the ages being 26, 30, 36 and 40 years respectively Each gave an individual history of having contracted syphilis The son of the oldest, at the age of 17, contracted syphilis and five years later developed paresis, the five patients contracting syphilis from different sources and all having paresis It is hardly likely that the one strain of infection would be contracted by all these individuals So the question is whether we have a special strain producing the same condition in different individuals derived from different sources, or whether we have the infection attacking the tissue which is most liable to be involved in the process

Dr Robert Henry Haskell, Ionia, Mich At the State Psychopathic Hospital, Ann Arbor, for several years we took the blood reaction of wives or husbands of paretics and likewise of the offspring, if any While we found that about 40 per cent of the conjugal mates of paretics had a positive Wassermann, the percentage of positive reactions in children was very small, less than 10 per cent I believe In fact, these children were, as a rule, good-looking and bright As you go through the family history in these cases you find that the number of deaths of children in early life is excessive, so that while the census for the state of Michigan shows about three living children in each family, in the families of eighty-four paretics we found on an average less than one living child in the family after an average married life of eleven years It seems to me that why most of the children of paretics fail to show a positive reaction is that the actually infected ones have died young Hauptmann lays great emphasis on the differences between actual hereditary infection with the spirochete and syphilitic intoxication of the germ plasm, a distinction which I believe we must keep clearly before us

Dr George A Moleen, Denver About seven or eight years ago a woman was taken with apoplectiform seizures, in which there was introduced a type of paresis of the dementia class with confusion and other symptoms of the condition, which progressed, and in about four and one-half to five years she died in an institution At about the time of her death the husband began to show definite signs of a paretic type with loss of reflexes and some incoordination, however, with the tremor and then with the apoplectiform seizures, of which he has had two, without suffering a dementia, and only since the apoplectiform seizures has he had some confusion Neither case, in fact, showed optic disturbances in the form of atrophy, but both presented the pupillary phenomena The child of this conjugal relationship was a definite, simple-minded imbecile of rather a higher grade type He presented the evidences and the stigmata of degeneration With a little assistance he would probably be able to make his way in the world and help himself, but I doubt very much whether he will make any progress alone

With reference to the strains Many theories have been advanced, from the neurotropic theory of the French, and the symbiotic view of the influence of other organisms on the spirochete, as well as a selective affinity on the part of some nervous systems for the neurotic influence Yet, as has been said, it will take time and judgment before we can arrive at definite conclusions as to whether or not there are such strains, even in spite of what would seem to be very good evidence at the present time

Dr Harry H Drysdale, Cleveland The condition does not seem to be as uncommon as the literature on the subject would indicate It is to be regretted that these cases have not been reported In my experience also, in the examination of children of paretics not more than one in ten gives a positive Wassermann It is surprising that in examining children of parents afflicted with some form of syphilis, the Wassermannn test is so frequently negative I am extremely glad that I have reported this case as it has brought forth, in discussion, some very interesting and valuable points

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A BACTERIOLOGIC STUDY OF THE CAUSES OF SOME STILLBIRTHS

PRELIMINARY REPORT

JOSEPH B De LEE, M D
CHICAGO

Thirteen years ago, in consultation, I saw a child of a healthy mother born with a temperature of 101 which within a few hours rose to 103 The child died of streptococcus septicemia, the mother showing no signs of infection A year later, a physician's wife, after a mild pharyngitis, developed albuminuria and eclampsia Artificial delivery was performed Out of the child's nostrils pure pus exuded The pneumococcus was found in it

Several other cases have indicated to me that the child can become ill, independently of its mother, and may even die, the mother being only indirectly affected, or not diseased at all

Case 1—Mrs F H, primipara, who had always been well, and who was pregnant eight months, had a slight pharyngitis A few days later the motion of the child ceased Anemia and mild asthenia were observed, but no fever Four weeks later labor came on A macerated fetus was delivered The organs contained a pure culture of *Streptococcus viridans* The mother had postpartum hemorrhage, requiring the use of a tampon A fever of thirty-six hours' duration subsided without complications

Case 2—Mrs R P, who had had septic history in previous labor, and was pregnant seven months, had been well, without fever, but had felt no motion for ten days There was spontaneous delivery of a macerated fetus The organs contained pure culture of an anaerobic nonhemolytic streptococcus Convalescence was interrupted by cerebral symptoms resembling thrombosis

Case 3—Mrs E T W, primipara, had two attacks of gallbladder trouble during pregnancy Labor began three weeks prematurely There was no fever The fetal heart tones disappeared after twelve hours of infrequent, weak uterine contractions When delivered, the child had just begun to macerate and was very pale There was odor to fetus and meconium Professor Zeit's necropsy diagnosis of the fetus was hemorrhagic septicemia virulenta, and there was a pure culture of pneumococcus The mother, although the perineum was stitched and the uterus packed, has had no fever or evidences of infection

Other cases will be reported later, with more complete histories and pathologic findings The object of this preliminary report is to put these facts on record and to urge other investigations along these particular lines

I am convinced that this discovery opens up an immense field for study, that we may thus find the cause of many cases of so-called "habitual abortion" and repeated "premature labor after viability and before term," and that we may come on new problems of immunity, focal infections, nephritis during pregnancy, eclampsia, puerperal sepsis, blood-borne transmissions, and new aspects of the transmutations of bacteria

Many alluring speculations and hypotheses present themselves

25 East Washington Street

THE TREATMENT OF AMEBIC DYSENTERY *

JOHN PELHAM BATES, MD
GREENWOOD, MISS

The conclusions following in this paper are from an experience with amebic dysentery in the Department of Sanitation of the Canal Zone in Panama, covering the period from 1904 to 1913 inclusive During that time various therapeutic measures were tried First, the treatment with quinin irrigations, a measure carried over from the Philippine service, later, treatment by large doses of bismuth subnitrate, a measure instituted by Dr W E Deeks, and finally, the use of ipecac after its reintroduction by Rogers in India and Dock in this country, to which I subsequently added bismuth as a correlative treatment for the purpose of hastening the process of healing the ulcerations present in the intestine, left only partly healed after ipecac had served the purpose of eradicating the amebas

Deeks[1] has also pointed out the advisability of using bismuth as an after treatment following ipecac or emetin, but so far I have seen no work of his reporting the results of such a method of treatment What I wish to lay stress on here is the important point that all ulcers in the intestine must be healed entirely before one can expect permanent results from any treatment, and that one must also expect a considerable lapse of time before this is safely accomplished in cases of such extensive ulcerations as are found in amebic dysentery

My present interest in the subject of the treatment of amebic dysentery has arisen because of reports in the recent literature of recurrent cases after repeated treatments with ipecac or emetin, and because a small number of recurrent cases have come under my immediate observation

Judging from my own experience since the revival of the use of ipecac, it appears to me that recurrences ought not to take place, if all of the problems entering into the treatment of amebic dysentery are considered and the treatment necessary to meet these problems is carried out, that is, treatment to aid the action of ipecac as an amebicide, treatment to hasten the complete healing of the ulcerations in the intestine and the allowing of ample time for these ulcerations to heal entirely before patients are discharged as well In short, a cooperative or correlative treatment to ipecac

I first began the treatment of amebic dysentery with powdered ipecac in Colon Hospital, Panama, in 1909, and continued its use until 1912 During this time I had a sufficiently large number of cases to form definite conclusions as to results obtained under this method While it is not possible to follow after-results in all patients discharged from a hospital, I was able to follow some of them, and two of these patients especially One, a negro, I saw a year after treatment There had been no recurrence of symptoms during the year, and there were no amebas present in the stools after repeated examinations The other, a native Panamanian, became an orderly in my wards after his discharge, and was under my immediate observation for two years He had no recurrence of symptoms during this period I took the trouble to examine his stools at various intervals, but each examination was entirely negative for amebas With such results as these two men showed, men belonging to a class of patients low in the mental scale and always unfavorable, I feel safe in assuming that other patients treated in the same manner and discharged as well must also have remained well

With these facts in mind, I have felt some surprise in noting reports of recurrent cases in the literature and also in encountering recurrences in patients who had had repeated treatments with ipecac, emetin, and alcresta ipecac

THE CAUSE OF RECURRENCES

Most writers attribute the cause of recurrences to the formation, under the action of the ipecac, of "encysted" forms of amebas This may be true to some extent, but I hesitate to accept this phenomenon as the sole cause, and am rather more inclined to conclude that as soon as the amebas are reduced below the limit of microscopic detection, all treatment is discontinued, at a time when the ulcerations are only partly healed, and when a few living amebas are no doubt still present, though not detectable, to find lodgment again in half healed ulcers and thus renew the symptoms of the previous attack I am forced to this conclusion from the history of one of my recent patients, who stated that throughout a period of twelve years he had suffered from numberless attacks of dysentery In these attacks he had been treated with different forms of ipecac by various men, each of whom had dismissed him as well as soon as his immediate symptoms had disappeared After variable intervals of time from these treatments, the symptoms had recurred It may be of interest to note that this patient is now well and has remained uninterruptedly well for a period of seven months after the treatment to be outlined presently It is from this man's statement and from the lack of any statements in the literature to the contrary that I conclude that the treatment of amebic dysentery as now practiced is incomplete, and that too much dependence is placed on ipecac alone, to the exclusion of such useful correlative treat-

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* Read before the Section of Medicine of the Mississippi State Medical Association May 10 1916, Greenville Miss

[1] Deeks W E Proc Med Assn Isthmian Canal Zone, April September 1913 p 85

ment as rest, diet, enemas, bismuth, and most of all, time, to complete the healing of the ulcerations in the intestine.

SOME PROBLEMS IN THIS DISEASE

Before entering into the details of what I term "correlative treatment," I think it best to review some of the problems confronting us in this disease. Some of these problems are practical, some more or less theoretical.

One of the practical problems, which is of course obvious, is the destruction of the amebas. This, I think, is largely done with ipecac and hence needs no discussion here. One of the theoretical problems is a biologic property of amebas, namely, symbiosis, which may be discussed with the idea that by taking advantage of this property we can enhance the action of ipecac in destroying amebas. Another practical problem is the pathology of amebic dysentery.

Symbiosis.—It is well known that amebas live and multiply through symbiosis, that is to say, they are dependent on other low orders of life for their maintenance. This is probably accounted for in two ways. First, other bacteria disintegrate food particles in such a way as to make the food available for amebas to incorporate into themselves, and, secondly, in someinstances, these lower organisms serve to liquefy their surrounding mediums so that amebas can move and find food held suspended in this liquid, for it is impossible for amebas to live except in fluid surroundings unless they are in the dormant or "encysted" stage. The dependence of amebas on other low orders of life for existence is well shown by the locations selected by amebas in the human economy for their habitat.

Thus we first find the amebas located in the mouth around the teeth and gums, where moisture and bacteria are both abundant. They next pass through the stomach and small intestines in the "encysted" forms, for in this stage they are enabled to resist the deleterious action of the digestive juices and ferments and to find lodgment finally in the large intestine, especially about the sigmoid flexure and rectum. Here again they are favored, as bacteria are abundant, and moisture, though less in amount, is still sufficient. They are no doubt favored again in this location by the comparative stasis of this portion of the large intestine. These "encysted" forms, now finding all conditions favorable, begin anew their normal life cycle by budding or gemmation, the process of "encystment" being a property reserved in amebas to preserve their existence when too closely pressed or menaced.

It appears to me, then, that the knowledge of this property of symbiosis of amebas can be used to advantage in treatment by teaching us to reduce the bacterial flora of the intestine to the minimum and thus place the amebas in an unfavorable condition for reproduction and growth. While it is not expected that one shall be able to destroy all bacteria in the colon, nevertheless I believe that frequent enemas will reduce the number of bacteria to a great extent and thus place the amebas in such an unfavorable condition for existence that their power of resistance will be proportionately reduced, and the effect of the ipecac on the amebas, enhanced in inverse ratio. However, if enemas do not accomplish all one could wish in this respect, they will at least wash away large quantities of surface amebas and hence reduce the amount of work required of ipecac or emetin. From this, then, it is clear that enemas are one of the important factors in the correlative treatment of amebic dysentery.

Pathology.—As I have just stated, the intestinal amebas are located principally in the sigmoid and the rectum. Therefore one would expect to find this area of the large intestine bearing the brunt of attack in amebic dysentery, which is usually the case. But in patients who suffer so severely from the ravages of this disease as to come to necropsy the lesions are far more widely distributed. All the large intestine is invaded, together with the head of the cecum, and ulcerations sometimes extend for a foot or more into the ileum. The ulcers are closely approximated and they frequently erode the surrounding tissue, joining several small ulcers into one large irregular area. They vary in size from that of a pin head to areas larger than a silver dollar. Some are round, some are irregular in shape, nearly all are excavated more or less, and the edges of the mucous membrane tend to roll into the craterlike area. In some places tunnels underneath the mucous membrane connect one ulcerated area with another. The ulcers usually pass through the mucous membrane, some extend down into the muscular coat and have irregular floors. In two instances, I have seen perforations occur, in one of these the perforation took place in the sigmoid flexure, in the other the perforation took place in the cecum. In the more acute cases the mucous membrane is red and very much thickened, but in the chronic forms the mucous membrane is often pale and is thinner than normal and the rugae are largely obliterated. The largest ulcers are usually first in the rectum and the sigmoid, but large ulcers are again noted in the head of the cecum. The latter fact, the tendency for the cecum to bear a heavier part of the invasion than the other upper portions of the colon, I shall refer to again in speaking of occasional cases intractable to all medicinal treatment.

In cases not so severe as to refuse to yield to treatment one would hardly expect such extensive destruction of tissue as that described above. But one must infer, if the case has been of any considerable duration, that destruction of tissue will be rather large and that some of the ulcers must be deep in the structure of the intestine. Therefore, in instituting any kind of treatment for the relief of such extensive ulceration, one must expect a considerable lapse of time before these lesions can heal.

TREATMENT

One of the first and most necessary factors in treatment, whether the case is mild or severe, is complete rest. The patient is put to bed and given a saline purge or castor oil. He is kept in bed until all the acute symptoms have subsided. After the purgative has acted, emetin or ipecac is begun. I usually use one-half grain injections of emetin daily for an adult until two grains are given. I then increase the dose to 1 grain a day and continue until all amebas are cleared from the stool, as shown by microscopic examination. This will usually require a total of from 5 to 6 grains of emetin. If one does not have access to the microscope, it is well to give a total of at least 6 grains of emetin. At this time the emetin is discontinued, and bismuth subnitrate in large dose is begun. Bismuth acts in two ways: first, as a sedative on the intestinal tract and as an aid toward the healing of the ulcers present; second, as was first pointed out by Deeks, bismuth itself acts as an amebicide and is an added help in destroying such amebas as may be left after the discontinuation of the emetin or those that may be formed from the "encysted" stage. Bismuth is usually given in 1 dram doses every four hours during the waking hours until the stools are well formed, and until some constipation is present It may then be reduced to 1 dram three times a day until the patient is discharged as well

Enemas of normal saline solution, 2 or 3 quarts at a time, are begun as soon as the effect of the salts or castor oil has subsided, and are used every four hours during the waking hours, and continued in this quantity throughout the entire period of the administration of ipecac or emetin They may now be reduced to two or three a day and later to one a day, merely to prevent the constipation following the bismuth It is well to remember that in flushing the bowel it is necessary to use a short tube in order to avoid the ulcers that may be low in the rectum At first it will be found that the bowel will tolerate only a small quantity of fluid, it finally becomes more tolerant, and a quart or more will easily be retained In attempting to examine stools for amebas after these large enemas, it will be necessary to retain the whole stool, that is, the enema and such fecal matter as may be present Out of this one should select particles of mucus, shreds of necrotic tissue, or flecks of bloody material, and at least six or more separate examinations of this material should be made before one concludes that the stools are negative for amebas

Experience has shown that sweet milk is the best food in amebic dysentery It may be given every two hours during the day in quantities of from 4 to 8 ounces at each feeding After the more acute symptoms have passed and the stools are beginning to be partly formed, the milk may be gradually increased in amount and the time between the meals lengthened At this stage eggs, soft-boiled or poached, may be added to the diet with one slice of dry toast at each feeding As the improvement continues, the food may be gradually increased until the patient is finally returned to a full diet

To carry out this management until one is reasonably sure that all ulcers are healed and replaced by new tissue will require in the acute cases at least four weeks' time In the more severe cases it will require a total of from six to eight weeks before one should feel safe in discharging the patient as well

I have stated with confidence that the management just outlined will effect a cure of amebic dysentery, and my experience has proved this to be true in a large majority of all the cases Nevertheless it must be expected, especially in the tropics, that some cases will be encountered which have advanced so far that no kind of treatment can be of any help Occasionally there will be others, though rare indeed, that will have relapses in spite of the treatment outlined It will be recalled that in reviewing the pathology I called attention to the fact that the cecum sometimes seemed to bear the brunt of the attack, and that ulcers often extend well up into the ileum It is this class of cases that I surmise offer the greatest resistance to treatment, and may present relapses in spite of any management, on account of the inaccessibility of this area to repeated enemas In cases of this kind, when two or three efforts at treatment by medicinal means have failed, appendicostomy will have to be advised. After this the colon should be flushed out several times a day with saline solution, followed by powdered ipecac suspended in some bland material, such, for instance, as mucilage acacia

DISCISSION OF CRYSTALLINE LENS*

EDWARD JACKSON, M D

DENVER

The accounts of this operation found in the larger textbooks of ophthalmology are generally unsatisfactory, that of Fuchs being least so Better descriptions, both as to indications for the operation and technic, are found in special works dealing with ophthalmic operations, especially in Beard's "Ophthalmic Surgery", and the best description is given under the head "Discission" in the American Encyclopedia of Ophthalmology

The great variations that occur in the behavior of the eye following this operation, however, are poorly reflected in any condensed account of it They are best shown by rather full extracts from a series of case histories, six of which are given here with brief comments In all these cases the needle was introduced through the limbus, as I have described elsewhere[1] For the first entering of the lens I prefer a rather broad needle, as the Bowman stop-needle, or the medium size of Knapp's knife-needles, which will make a sufficient cut in the capsule by the mere forward thrust When, however, it is desired to divide the nucleus, I prefer, as for dividing the capsular membrane, the narrow knife-needle of the Hays-Ziegler type In all cases the eye is placed and kept fully under the influence of atropin, at the time of operation and so long as there is any noticeable reaction In some cases ethyl-morphin hydrochlorid (dionin) was also used to hasten the process of absorption, after reaction from the needling had subsided No very marked benefit could be traced to the latter Sometimes when the eye has become entirely quiet after needling, the absorption of the lens becomes rather sluggish I then omit atropin, hoping that the action of the ciliary muscle will rather hasten the process of absorption

Case 1—Miss M D was first seen April 4, 1903, when 10 years old She always had poor sight, does not know that it has changed Vision Right, 4/60, left, 4/10 partly Never had convulsions, had measles when 5 and typhoid when 9 years old Teeth sound and well developed, although irregular

Ophthalmoscope Each eye shows lamellar cataract, almost complete at the nucleus with scattered "riders' in the cortex The nuclear opacity is 5 mm in diameter in the right, 4 mm in the left Needling of the right eye was advised but she was not seen again for nine years

Sept 5 1912, eyes but little changed, patient has been in school for four years Vision Right 4/45, left 3/12 partly Under atropin, right —7 50 sph vision equal 4/20 Nucleus entirely opaque

September 26 a Ziegler knife-needle was passed into the anterior part of the right nucleus, making a horizontal cut 2 mm long in the anterior capsule

September 28, slight redness about the puncture in the temporal limbus, slight opacity about the cut in the capsule

October 19, decided clouding of the whole lens

November 23 no atropin has been used for three weeks The pupil is gray with some mother-of-pearl reflex, the lens slightly swollen

December 7, with a Ziegler knife, the nucleus was cut rather freely There was bleeding into the anterior chamber, forming a line from the cut along the temporal limbus This had disappeared next day

Jan 11 1913 fundus red is seen in the edge of the pupil below and to the nasal side

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[1] Jackson Edward Tr Am Ophth Soc 1913 xiii 394

April 7, the lens nucleus was freely divided by a horizontal incision A large fragment, 3 mm in diameter, and smaller ones fell to the lower angle of the anterior chamber The tension of the eye, which had been 28 mm, rose seven hours later to 58 mm

April 8, tension lower, eye more comfortable Lens masses milky and fused together After this the eye gradually became quiet and the tension fell to 24 mm

August 28, there were still two fragments of lens in the bottom of the anterior chamber But they disappeared soon after this

October 15, right + 8 50 sph ⊃ — 0 50 cy ax 165° = 4/6

May 25, 1914, with a bifocal lens she constantly uses the right eye Vision = 5/6 partly, left vision continues 5/15

In this case of lamellar cataract in a girl of 19, the lens was wholly absorbed after three needlings, requiring a period of about one year There was no severe reaction at any time, except the last needling, and no other distinct rise of tension in the eyeball The number of operations required was about what might be expected from the average account of discission But the time occupied in the absorption was greater, although the patient's age was within the generally accepted limits of 20 to 25 years It should be noted that there was enough clear lens substance present to keep the cut in the capsule well opened by its swelling This tends to bring about the desired result with the smallest number of operations In the next case the lens was more generally opaque Practically no swelling followed the operation, and six operations were required, although the time occupied was only about eight months, the two patients being of the same age

CASE 2—Miss G H, aged 19, with negative family history, and without history of trauma, was noticed to have cataract of the left eye, at the age of 7 years There is no reason to believe that this eye ever had good vision It shows constant divergence, of which the history of onset is quite indefinite Right Vision 1 2, normal in all respects

Jan 5, 1915, L Light perception and moderate projection Diverges constantly 40 centrads Reaction of pupil good Anterior chamber rather deep Pupil occupied with gray lens opacity

July 27, broad iris shadow through clear cortex Deeper lens substance gray-white Pupil under atropin, circular 8 mm Under cocain, a Bowman stop-needle was thrust 4 mm into the lens substance, given a half twist on its axis, and withdrawn without any attempt to cut laterally The lens substance encountered seemed soft, and a little opaque lens matter fell into the anterior chamber

July 30, lens matter gone from the anterior chamber, pupil full width Slight hyperemia, around the puncture only

August 2, eye quiet No clear cortex visible Cut in capsule not bulging, but small triangular tongue of lens swings out of it

August 13, a darker spot toward the nasal side of the pupil is noticed Lens looks thinner

August 23, with Ziegler knife-needle a vertical cut of 4 mm was made in the lens Layers of cortex flapped forward in the cut, and a small piece fell into the anterior chamber, and had disappeared next day

August 27, hyperemia gone except at puncture Pupil 8 mm Little swelling of lens

September 26, a horizontal cut was made in the capsule from the nasal margin of the pupil to the vertical cut The lens substance was broken up well, but none fell into the anterior chamber At this time it was found that the lens nucleus was opposite to the upper nasal quadrant of the pupil rather than behind its center

September 7, little reaction Tonometer shows tension of 26 mm

September 13, eye entirely quiet Fragments of lens were hanging forward through the opening in the capsule, but none had fallen into the anterior chamber Red fundus reflex could now be obtained at the temporal margin of the pupil

October 19, a cut was made in the nucleus at the upper nasal quadrant of the pupil The needle penetrated obliquely through the vascular limbus and clear periphery of the cornea, causing notable bleeding A fraction of a drop of blood escaped from the conjunctival opening, a small pointed swelling formed at the point of entrance, and a line of red showed the track of the needle in the cornea, with some gray clouding around its inner portion and termination in the anterior chamber

October 20, the foregoing gray cloud has become a dense white opacity, 2 mm in diameter, apparently at the posterior surface of the cornea, across which a red line shows the needle track There is marked hyperemia around the puncture, and a slight pericorneal zone The lens opacity is broken up with a dark almost clear opening in the center, and a crescent of black pupil to the temporal side

October 23, the exudate at the seat of puncture is thinner, the red line about gone, the eye almost free from pericorneal hyperemia

October 28, the exudate at the corneal puncture is getting thinner at the edges, and the patch smaller It is probably situated in the deep layers of the cornea

November 1, the exudate in the cornea is one-third its original area, and is separated from the opaque limbus

November 8, the exudate is very faint and indefinite The eye is quiet

December 1, the atropin was stopped and pupil allowed to contract

December 20, an oblique cut was made clear across the dilated pupil, from the upper temporal to the lower nasal margin Lens masses fell freely into the anterior chamber One hour later the patient suffered from a chill, with nausea and increasing pain After seven hours the pupil had contracted to 4 mm in diameter, and there was marked pericorneal hyperemia, and a little tenderness of the eyeball Tension normal, to fingers Atropin 1 per cent hot stupes, and later morphin was given hypodermically to relieve pain

December 21, pupil 7 mm Less pain

December 22, little pain, but still periods of nausea The anterior chamber was one-third full of lens masses The whole eyeball red and moderately tender

Jan 21, 1916, eye about quiet, a minute speck of lens substance is still visible on the posterior surface of the cornea

January 25, all trace of lens gone from the cornea, and lower temporal two thirds of pupil clear But the fundus reflex is dull, and no details are seen There are membranous opacities of the vitreous Plus 12 sph gives vision of 0 04, and fixation is poor, although tending to be central

March 3, an inverted T-cut was made in the capsule, dragging down some white lens substance in the upper part of the pupil

March 6, eye almost white

March 21, eye quiet

The striking features in the progress of this case are the hemorrhage into the needle track, and the local and general symptoms excited, as in Case 1, when a large amount of lens substance fell into the anterior chamber, but here without rise of tension

It may be noted that in Case 1 there was bleeding through the needle opening into the anterior chamber In Case 2 after the fourth operation the line of blood was distinctly visible through the cornea, and the effects of the bleeding were watched until they had completely disappeared in about two weeks

In the series of six cases there were in all sixteen needle operations In only two was there noticeable hemorrhage in the track of the needle wound The limbal puncture has been used by me for the division of "after" cataract or a membrane for about twenty-five years And among some hundreds of such operations these two are the only instances of such hemorrhage that have been noted A chief advantage of entering the needle through vascular tissue is that the wound shall be promptly, aseptically sealed by the resulting hemorrhage It was conceivable that some such hemorrhage might at times constitute an undesirable complication But this experience of the few times it was noticeable, and the smooth progress of the cases when it occurred seems to rule out any possible danger from this source

The white exudate that appeared in the vicinity of the needle track in Case 2 suggested that possibly lymph was being poured out from Schlemm's canal, either through injury of a part of this somewhat variable lymph space, or some rather large channel communicating with it If this were the case, no harm was done Schlemm's canal lies a little in advance and external to the extreme periphery of the anterior chamber But a needle entered not more than 2 mm back from the clear corneal margin, and thrust directly toward the lens so as to escape the iris when the pupil is fully dilated, will pass in front of Schlemm's canal, unless it be located in the clear cornea, or lie quite superficial in the sclera Of such anomalies no evidence has been found, either in sections, photomicrographs or published accounts of the anatomy of this region

The severe local and general reaction which occurred after the fifth operation was not attended with any noticeable rise in the tension of the eyeball The tension remained, as after the preceding and subsequent operations, in this case at least quite as low as in the normal eye The pain was severe and continued several hours, and the patient was seen when it was at its height, although the tonometer was not then used The general symptoms were quite those of surgical shock, as described by Williams[2] in connection with contusion of the eyeball The nausea was quite severe, went on to vomiting, and occasionally recurred for three days, large masses of lens substance being still present in the anteror chamber

Case 3—Miss H A, aged 18, suffered in early childhood with trachomatous keratitis causing perforation of the right cornea near its temporal margin and adherent leukoma, bulging of the cornea and excessively high myopia In the left eye the cornea had flattened, causing high hyperopia Both corneas are nebulous

June 26 1912 lens right — 16 to — 25 D gives vision of 0 02 to 0 03, left + 4 sph ⊃ + 8 cy ax 168° V = 0 05

A Bowman straight stop-needle was thrust through the lower temporal limbus of the right eye into the center of the nucleus given a half rotation on its axis, and withdrawn without cutting the capsule more extensively than by its mere forward thrust

June 29 there has been rather sharp reaction, a marked pericorneal zone, and decided swelling and opacity of lens Tension of right eye 40 mm. of mercury (Gradle tonometer)

July 2, eye almost free from redness, quite comfortable Almost no fundus reflex perceptible in the pupil Outer quadrant of lens quite gray

July 17, lens masses protruding from capsule, and in angle of anterior chamber Tension 47 mm. Eye red, but not painful

September 4, eye quiet, but lens masses protrude through opening in capsule to the posterior surface of the cornea

October 2, the protrusion of lens substance much less, anterior chamber much deeper

November 6 red reflex shows in half the area of pupil Eye white but redness on examination and manipulation

Jan 22, 1913, the pupil is clear except a crescent of membrane at its lower margin Right — 15 sph ⊃ —5 cy ax. 150°, vision = 3/30 Tension 20 mm

March 23, 1916, pupil clear The fundus seems normal. Right — 14 ⊃ —6 cy ax 160°, vision = 0 06

A girl of 18 had the lens needled for excessively high myopia It was entirely absorbed in less than seven months, after a single operation, in which the cut in the capsule was not more than 1 5 mm long But the lens to start with was entirely clear Its exposure to the aqueous humor resulted in immediate swelling, which continued to keep open the capsular wound with extrusion of small lens fragments and the needle puncture went to the center of the nucleus, which was to some extent disorganized by the rotation of the needle In this case there was rather prolonged elevation of intra-ocular tension, which probably did not rise at any time above 50 mm of mercury, and there was no reason to suppose it caused permanent impairment of vision There can be no doubt that clear lens substance is much more prone to swell than opaque lens matter, and this by keeping open the rent in the capsule may hasten dissolution This tendency may account for the rather rapid and complete removal of the lens that is sometimes seen after injury even in patients approaching middle life

Case 4—Miss M W, aged 24, had worn glasses four years, but lately noticed she did not see so well

April 17 1903 Right + 2 ⊃ — 0 50 cy ax 150°, V = 1/4 mostly Left + 1 12 ⊃ — 0 62 cy ax 15° V = 1/3 mostly This vision in the right eye was obtained under homatropin, but in the center of the lens there was slight opacity and irregular refraction

May 1, 1908, corrected vision, right, 4/12, left, 4/6 mostly Ophthalmoscope Right opacity of lens in both anterior and posterior cortex, *most dense in the periphery*, and not extending to the posterior pole Fundus normal Left, media clear The two irises are of the same gray color and normal in appearance

Oct 25, 1909, right vision 4/45 At the nasal margin of the 7 mm pupil there is still red reflex, and the largest retinal vessel can be made out

Sept 13, 1910, right vision equals 1/60 No fundus reflex Anterior chamber rather shallow

November 22, the opacity is still not complete to the capsule, but on account of the white appearance of the pupil the patient seeks operation A Ziegler knife-needle was thrust through the nucleus of the right eye

November 23, moderate hyperemia chiefly at the puncture in the limbus Cut in capsule 1 5 mm long, cut edges whiter, anterior chamber rather more shallow

November 28, eye quiet Track of needle visible in lens Other parts of superficial cortex still clear

December 12, there is distinct fulness of large deep scleral vessels, and a slight purplish discoloration of the sclera The track of the needle thrust is still noticeable Tension plus T

December 29, sclera normal Nuclear part of lens whiter Anterior chamber deeper

Jan 14, 1911, Ziegler knife-needle thrust deeply into nucleus seemed to drag nucleus with it toward wound of entrance, as though it were loose in the cortex

January 16, deep hyperemia of globe Cut edges of capsule and superficial layers of cortex are rolled back. Lens distinctly more swollen

January 23, lens swelling more marked

February 4 lens still swollen Tension + T ? Specks of deposit on Descemet's membrane Deep hyperemia of globe

March 4, eye free from hyperemia, cortex hazy to extreme periphery

April 1 the nasal edge of the lens can be seen on looking very obliquely The lens cortex is hazy, gray, and the nucleus white The anterior chamber is a little more shallow to the temporal side and the nucleus displaced in that direction A knife-needle was passed into the nucleus and turned freely

April 2, moderate deep hyperemia of globe Pupil 8 mm Some lens substance in the bottom of the anterior chamber

June 10 upper part of nucleus absorbed

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[2] Williams E R Tr Am Ophth Soc 1915, xiv, 403

August 31, a triangular piece of nucleus floats freely in anterior chamber Light hurts the eye, and there is aching of that side of the head

October 21, eye quiet Nucleus dense yellow, white to lower temporal side Cortex forms a mass in upper nasal part of pupil Capsule wrinkled

November 8, needled both nuclear and cortical masses

December 8, eye quiet Absorption proceeding Nuclear mass 3 by 3 5 mm

December 18, needle entered at lower limbus, cut from upper nasal margin of pupil to central opening Then from lower temporal margin pushed remains of nucleus into upper angle of anterior chamber, where it adhered and remained a month, then becoming absorbed

June 10, *1912*, pupil slightly ovoid and displaced down and out 4 by 3 5 *mm* Right + 11 ⊃ + 1 cy ax 60°, vision = 4/4 partly

Aug 9, 1913, pupil nearly circular, clearer, correcting vision equals 4/4

A woman aged 31, who had been gradually developing cataract for seven years, but in which there was still considerable clear cortex, had five needlings, through which complete absorption of the lens was secured in about eighteen months The eye obtained full vision, and less astigmatism than after an average cataract extraction, and the result was in every way satisfactory, except a slightly ovoid pupil The point of this ovoid, turned down and out, was where the iris had been pressed on for a considerable time by swollen lens, and at this point the sphincter appeared slightly narrower than elsewhere It seems probable that there had been some atrophy of tissue from pressure This patient lived in another city, came to Denver, and remained a few days for each needling, and during the remainder of the time was engaged in rather exacting secretarial duties

Case 5—Miss D M, aged 32, consulted me in 1901, with a history of headache and nervous prostration Correcting lenses gave much relief and vision as follows

Right + 1 75 — 0 75 cy ax 10° = 4/4 plus

Left + 3 50 sph = 4/4

July 5, 1906, her glasses and vision were

Right + 2 + 0 75 cy ax 10 = 4/4 plus

Left + 4 Sph = 4/5 mostly

At this time her accommodation was R 5 D, L 4 D

May 15, 1907, vision with the foregoing correction is Right 4/4, Left 4/15 She has been in poor health for one year and a half, but has recently been to the eastern coast and has gained 22 pounds in weight The right eye appears normal in all respects The left eye shows minute dots in and behind the nucleus Her eyes are a blue gray, but the right also shows brown pigmentation over the region of the sphincter, which is quite absent from the left There are no deposits on the cornea or other *signs of pigmentation* Given ethylmorphin hydrochlorid 1 240 to be instilled every second night

July 1, Left, vision equals 4/30 There is evident general clouding of the vitreous Given potassium iodid, 50 per cent, from 10 to 20 drops three times a day This caused nasal watery discharge, disturbance of digestion, and was not pressed above this amount

August 26, vision and vitreous as before Transillumination normal *No fundus* lesions have been seen

Sept 27, 1910, vision has varied from 4/60 to 4/20, and has now fallen again to 3/100 The opacity has grown rather more dense at the center of the nucleus, although it was for a time less in other parts *of the pupil* It is now general The undilated pupil shows gray, and she wishes this appearance removed Under cocain, anterior capsule punctured

October 1, margins of cut in capsule and lens whitened for a space 3 mm long and 0 5 *mm* wide Eye quiet

November 5, cut in capsule 3 mm long Needle thrust through center of nucleus

November 7, very little redness about the puncture in limbus only Noticeable bulging of lower lip of capsule, and *some cortex protruding into anterior chamber* Atropin once daily keeps pupil fully dilated

November 11, more swelling about the cut in capsule, and lens more opaque

December 14, slow changes have continued in the lens Anterior chamber noticeably less shallow Eye entirely quiet

Jan 6, 1911, a 3 mm cut was made in the capsule from below upward, temporarily lifting the margin of the lens into sight in the bottom of the pupil Considerable cortex escaped into the anterior chamber *Eight hours later the cortex* was 2 mm deep in the bottom of the anterior chamber, the pupil 7 mm in diameter, moderate pericorneal hyperemia, and the eye felt sore

January 9, *hyperemia much* less *Fundus* reflex seen in notch at lower edge of lens

February 10, eye quiet Fundus reflex at edge of 7 mm pupil

March 14, *nucleus 6 mm in diameter* Thrust needle into center of it and twisted it fully around Nucleus loose in capsule

March 15, sharp pain last night Marked pericorneal zone Some lens matter in anterior chamber

March 18, no pain Eye almost free from hyperemia

March 24, eye quiet

April 1, with 6 mm pupil crescent clear 1 5 mm wide above and to temporal side

July 6, eye quiet

December 6, there remains an opaque disklike nucleus 4 mm in diameter Left + 12 sph = 3/40 With a Hays knife-needle, entered through the lower temporal limbus, the lens was pierced near the lower nasal margin of the pupil and dragged outward It was then pierced near the upper outer margin and dragged downward The nucleus stuck to the needle, and was left in the anterior chamber in front of the upper outer part of the pupil and iris With a bent lance knife a 4 *mm* incision was made at the corneal margin nearest the nucleus, which was easily extracted with the wire loop It measured 4 by 4 5 by 1 5 *mm* Shreds *of* capsule and vitreous were cleared away and physostigmin (eserin) 1 1,000 instilled

December 9, there is little discomfort, slight pericorneal redness and striate opacity of the cornea at the margin of the incision Dressing omitted

December 16, eye almost quiet Some cloudiness of vitreous With + 12 Vision equals 4/45

Jan 9, 1912, Left + 16 D sph = 4/22 Eye quiet

March 21, Left + 14 D sph + 1 25 cy ax 120° = 4/5 partly

March 22, 1915, Left + 14 sph ⊃ + 1 75 cy ax 130° = 0 9 The right eye continues normal R + 2 75 sph ⊃ — 0 75 cy ax 73° = 1 1

This patient was 41 years of age, with advanced but immature cataract, before the first operation At the end of fourteen months after *the fourth* operation there remained in the upper outer part of the periphery of the anterior chamber, a nucleus 1 5 mm thick, and a little over 4 mm in diameter, which was extracted through an incision made at the corneal margin, leaving an eye with a clear circular pupil, and practically good vision It seemed probable that this nucleus would also have been absorbed, but by removing it the period of treatment was shortened The eye required a dressing for two days, the patient not being confined to the house at any time

Case 6—Mr S G, aged 35, when first seen, Nov 14, 1903, had been treated several years before, for uveitis of *the right* eye

Ophthalmoscope Right, clouds of vitreous opacities through which the large vessels were just seen The *cornea* and lens were clear, the iris normal and the anterior *chamber* deep Left, media clear, fundus normal *Vision*, Right 1/20, Left 4/4 plus

Aug 20, 1904, Vision, Right 4/20

April 21, 1905, Vision, Right 4/150 *Ophthalmoscope* Large vessels still visible, clouding most dense toward macula and disk

Sept. 20, 1906, patient has been told he was getting cataract Right vision 3/150 Ophthalmoscope No fundus reflex Oblique illumination shows gray opacity of lens, chiefly of the nucleus Broad iris shadow

March 21, 1908, both eyes present a rather marked arcus senilis Right lens uniform, milky, grayish white, with a narrow iris shadow on the milky fluid The anterior chamber deep Vision, counts fingers at 3 feet

July 12, 1909, under cocain, with pupil dilated with atropin, a Knapp needle was entered through the temporal limbus, and plunged into the lens to the nasal side of the center of the pupil No lens substance or fluid escaped into the anterior chamber

July 13, slight hyperemia at puncture in limbus No other reaction

July 23, a horizontal incision 2 5 mm long was made in the anterior capsule near the lower margin of the pupil

August 6, reaction has been slight. The eye is now quiet

September 1, there has been a notable shrinking of the lower portion of the lens A free cut, 4 mm long, was made in the capsule at the upper part of the pupil

September 2, the eye has been uncomfortable There is moderate general hyperemia, and lens substance is protruding from the cut in the capsule

September 10, eye free from hyperemia Large lens masses are hanging forward to the cornea

November 5, absorption having ceased, leaving a nucleus of 6 mm in diameter, this was freely divided from below and across by Knapp's knife-needle. During this operation the aqueous escaped so that the lens fragments were left lying against the cornea This was done at 9 45 a. m By 5 p m discomfort had increased to dull pain with tenderness of eye, pallor and nausea. Tension plus 1 Under cocain, holocain and epinephrin instilled, an incision, 6 mm long, was made in the lower limbus, and the bulk of the lens fragments extracted with the Lewis wire loop The pain was relieved in a few minutes, and he had a good night's sleep

November 8, pupil only three-fourths dilated under atropin solution, and hyperemia increased Solid atropin dilated pupil This was applied daily for ten days

November 29, hyperemia subsiding, pupil dilated by a 1 per cent solution

December 13, hyperemia has gone except at lower limbus Remaining lens mass shrunken to one-third its original size

December 24, optic disk visible Lower nasal part of the vitreous very cloudy

Jan 7, 1910, with Ziegler knife-needle, a remaining white band was divided toward nasal side of pupil This was followed by a moderate reaction

February 25, a white mass was torn loose that was resting on the edge of the iris

February 28, very little reaction Vision, Right + 11 ⊃ + 1 50 cy ax 120° = 4/5 partly

Oct 12, 1915, Right + 12 ⊃ + 1 12 cy ax 40° = 0 9 The left eye has continued normal with corrected vision of 1.3

This patient was 41 years old with practically mature cataract that had been developing for three years, with a history of disease in the eye running back about ten years before that Good vision was scarcely expected in this case, but this patient and three of the others sought to get rid of the cataract because of the cosmetic indication He was 41 years old before the first operation, three needlings had been done, and after four months there remained a nucleus 6 mm in diameter This was freely divided and the fragments left in the anterior chamber until seven hours later, when pain and increased tension led to extraction of most of the lens fragments through a linear incision at the corneal margin Removal of the debris gave immediate relief But incarceration of the capsule occurred, causing distortion of the pupil Later a resulting band of white tissue was divided, or torn loose from the edge of the iris In this case, as in all of the others here reported, severe reaction occurred only when a large amount of lens substance was left free in the anterior chamber, and this irrespective of whether the intra-ocular tension was markedly increased or not

In all of these cases the cataract was unilateral, and it would seem that discission was especially applicable to unilateral cataract It is scarcely to be considered where one eye has been lost, or where both are already blind, unless possibly for young children The time required before the result is obtained rules it out when the patient is dependent on the eye affected On the other hand, a patient with one good eye will generally be loath to submit to an operation that will require both eyes to be closed for some days, with confinement to bed and other annoyances of a serious operation

As has been pointed out by Beard and others, discission may be done successfully much later in life than was formerly believed Two of these patients were over 41 years of age, and there is every reason to think that the lens would have been completely removed by discission, if as much time had been taken for the process as for some of the younger patients My belief is that many cataracts could thus be dealt with successfully up to the age of 50 or later But whether it is worth while in general to do this, rather than to extract them, seems doubtful

CONCLUSIONS

For monolateral cataract up to middle life, discission is to be considered as a proper procedure, and in many cases the patient will prefer it to extraction

The first discission should make only a short opening in the capsule, but may well penetrate to the center of the nucleus, so that disintegration of the nucleus may begin as soon as possible

The amount of swelling from a given interference will be proportioned to the size of the opening in the capsule, and the absence of previous change in the lens substance

Severe reactions and surgical shock are provoked by the presence of large masses of lens substance in the anterior chamber

Possible hemorrhage, from making the puncture through the vascular limbus, causes no danger to offset the greater safety from infection secured by this point of entrance

318 Majestic Building

PRELIMINARY CAPSULOTOMY IN IMMATURE CATARACT *

WILLIAM EVANS BRUNER, A M, M D
CLEVELAND

The value of any operation must be judged not merely by the results, however brilliant, secured with that procedure in the hands of one man, perhaps the originator of that special operation, but also, if not chiefly, by the results obtained by a large number of different surgeons

For that reason it may be worth while to record my experience, though small, with preliminary capsulotomy, the so-called "Homer Smith" operation, in the extraction of immature cataract

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

It is not my intention to enter on any discussion of the relative merits of this procedure and the intracapsular extraction, now so much in vogue, as a result of the work and teachings of Colonel Smith of India The very fact that so many operators are not as yet using the latter method is evidence that they are still seeking some other technic which to them, at least, appears not to be attended with so much risk

I have developed a preference for preliminary iridectomy in cases of unripe cataract, and have adhered to that practice in these cases, though no doubt it is not necessary to the success of this procedure This does, of course, subject the patient to an additional operation, but I have never seen it attended with any reaction in my own experience, except in one case many years ago, and that very slight, and if we can judge by the literature, not a few operators seem to prefer the preliminary iridectomy, as far as possible, in their cataract work However, it is not intended to open a discussion on this question, and it is granted that this procedure is not necessary to the success of the preliminary capsulotomy

I have used the Homer Smith knife in some cases and the Ziegler knife in others, and like the latter as well, if not better, provided it is one with a short cutting blade

I have allowed a twenty-four hour interval to elapse between the preliminary capsulotomy and the extraction, doing the former one morning and the latter the next morning Should excessive swelling and reaction occur, the lens could then be extracted the same afternoon instead of the following morning, but in my own experience I have had only slight reaction, and have had discomfort in only one patient Perhaps, however, I have not obtained sufficient swelling of the cortical material, and yet it has been enough to obtain the desired result When there is not much swelling of the cortex, and no reaction or pain, I am inclined, in my next patient, to try postponing the extraction for an additional twenty-four hours

One drawback to this operation is that it does not seem to permit of the successful use of the capsule forceps in removing the anterior capsule after it has been incised, as is possible when dependence is placed entirely on the forceps in opening and removing the capsule, a procedure which in my regular work has entirely displaced the cystotome

Another criticism of the operation lies in the fact that in performing the preliminary capsulotomy, we reach the cortex only on the anterior surface of the lens, while in these immature cataracts the cortex on the posterior surface is in the same condition We may find this portion of the cortex not affected by the capsulotomy, still clear, and more or less adherent to the capsule, and may experience difficulty in getting rid of it, or on account of its being perfectly transparent we may not be aware of its presence, or the amount of it, until the following morning, when the pupil, which appeared clear after the removal of the lens, will show some opaque cortical material in it This may absorb, or it may increase the probability or necessity of a discission later on, and is just what we wish to avoid by this procedure of preliminary capsulotomy

I have felt also that it might be wise to use the lid elevator rather than the speculum while making the corneal section for the extraction of the lens after the preliminary capsulotomy, as any unruliness of the patient at this juncture, or squeezing together of the lids, may be attended with expulsion of the lens immediately following the knife and loss of vitreous, though I have never had this misfortune

For the removal of the soft cortical material I depend here, as usual, on irrigation of the anterior chamber

This report includes six cases, the extent thus far of my experience with this operation One of the patients unfortunately suffered an injury to the eye after she left the hospital, so that she should scarcely be included A preliminary iridectomy, as stated above, was performed in each case A discission of the capsule was later done on four of the patients, including the one who suffered the injury to the eye One of the last patients operated on will unquestionably need a discission, and even the sixth one would no doubt be benefited by this procedure, so that in my own experience a discission of the capsule is needed in a larger proportion of cases than after the removal of fully mature cataracts

VISUAL RESULTS

In one case $6/5$ was obtained, $6/6$ in two, and $6/9$ in one, though this undoubtedly could be further improved by a discission of some thin capsule remaining within the pupillary area In my last case the vision is $6/21$ In this case irrigation of the anterior chamber could not be completed, so that there is considerable cortical material remaining, which will require a secondary operation The other one — the sixth patient — is the one who suffered the injury to the eye after leaving the hospital, and I do not as yet know what vision can be obtained with her

Without further comment, my notes in brief in the cases are as follows

Case 1—W B, man, aged 69, consulted me with the history of his sight failing for four years, he had been unable to read for six months

O D — 5 00 V = $3/45$
O S — 6 00 V = $6/60$

Ophthalmoscopic examination revealed nuclear cataracts, slight red reflex in the periphery, with the pupils dilated, faint glimpse of the retinal vessels in O D, but not in O S

June 15, 1914, iridectomy on O D Hemorrhage in the anterior chamber several nights later, probably from blow or pressure on the eye Otherwise recovery was uneventful

Nov 5, 1914, V of O D = fingers at 1 meter Red reflex seen, but no details of fundus Preliminary capsulotomy

Nov 6, 1914, lens fairly well stirred up, cortex swollen and opaque, slight reaction Extraction under local anesthetic Recovery was uneventful, and patient returned home in two weeks

Jan 7, 1915, some very fine capsule in the pupillary area, fundus in good condition

O D + 10 ⊃ + 3 00 axis 135 V = $6/6$, ordered for distance
O D + 14 ⊃ + 3 00 axis 135, ordered for reading

Case 2—Man, aged 58, consulted me in October, 1913, for gradual failure of vision extending over several years V O D = $6/12$, O S = $6/12$

Jan 7, 1914, O D $6/60$, O S $6/15$ Nuclear opacity in each lens

Jan 19, 1914, O D small iridectomy He or the nurse struck the eye two nights later, causing hemorrhage in the anterior chamber Otherwise recovery was uninterrupted and uneventful

May 5, 1914, O D counts fingers at 2 feet Preliminary capsulotomy with Ziegler knife

May 6, 1914, patient has no pain, cortex not much swollen Extraction of cataract under local anesthetic Considerable cortex, which was clear at time of operation, showed up a day or two later Anterior chamber was shallow for several days Eye showed no reaction With atropin and ethylmorphin hydrochlorid (dionin) the cortex gradually absorbed

June 30, 1914, some very thin capsule showed within the pupil, thicker in the periphery, media otherwise clear and fundus in good condition

O D +9 ⊃ +2.00 axis 15 V = 6/5 With +4.00 added, the patient reads 0.50 print very readily

Case 3—Mrs A W, aged 68, consulted me because of vision failing for two years With glasses vision = O D 6/60 O S 6/60

Ophthalmoscopic examination O D nuclear cataract, red reflex in periphery No view of interior O S ditto

Oct 22, 1913, small iridectomy recovery uninterrupted

Oct 29, 1914, capsulotomy with Homer Smith knife Capsule would not cut, but instead the lens moved readily before the knife Rotated knife to stir up lens as much as possible

Oct 30, 1914, very small effect from yesterday's operation Cataract extracted under local anesthetic Considerable cortex removed Irrigated anterior chamber as much as possible, but the cortical material would not readily come away and the patient became very restless, so that it was necessary to *desist No reaction followed, and patient returned home,* November 16, with considerable cortex still remaining This gradually absorbed in part

Jan 6, 1915, discission of capsule, stirred up small remaining particle of cortex No reaction followed

Feb 8, 1915, entire pupillary area perfectly clear Fundus in good condition

O D +10 ⊃ + 3.00 axis 165, V 6/6 Ordered for distance

O D +14 ⊃ +3.00 axis 165, patient readily reads 0.50 print, ordered for reading

Case 4—S C, aged 70, consulted me with history of sight failing in right eye for seven or eight years and in left six years Has been unable to read with right eye for five or six years and with the left for several months O D, nucleus of lens opaque, red reflex in periphery O S, nucleus of lens opaque, red reflex in periphery With pupils dilated a hazy view could be obtained of the nerve and blood vessels There is an excess of pigment in the choroidal spaces

Sept 11, 1914, iridectomy No reaction followed

Dec 30, 1914, preliminary capsulotomy

Dec. 31, 1914, moderate reaction Lens somewhat swollen Extraction under local anesthetic Recovery uninterrupted Some capsule remained

March 10, 1915, discission of capsule with Ziegler knife No reaction

March 16, 1915, pupil clear, fundus in good condition

O D +7 ⊃ +3.00 axis 180 V = 6/6 Ordered for distance

O D +11 ⊃ +3.00 axis 180. Reads 0.75 readily Ordered for reading

Case 5—K. A, aged 60, consulted me because of failure of vision, which has been progressing one and a half years

V = O D 3/60, O S, fingers at 2 feet.

Ophthalmoscopic examination revealed O D nuclear opacity involving most of the pupillary area Red reflex in periphery, with *no* view of fundus O S ditto In O S with the pupil dilated a glimpse of some of the retinal vessels in periphery could be obtained, but no view of the nerve

Dec 10, 1915, O S iridectomy No reaction

Feb 14, 1916, O S counts fingers Considerable red reflex Preliminary capsulotomy with Ziegler knife

Feb 15, 1916, moderate swelling of lens and slight reaction Lens extracted under local anesthetic, patient was very restless so that a thorough irrigation of the anterior chamber could not be performed, and considerable sticky cortical material remained At a moment while nothing whatever was being done to the eye, patient squeezed and expressed a bead of vitreous, so eye was closed without attempting to remove any more of the cortex Moderate reaction followed, but recovery was uninterrupted

March 7, 1916, thick capsule with cortex in the lower portion of the pupillary area, this has, however, been gradually absorbing and becoming smaller There is a clear area above through which a good view of the fundus is obtained, and shows it *in good condition*

O D +11 ⊃ +2.50 axis 105 V 6/21

A discission at a later date will no doubt markedly improve this vision

Case 6—Mrs E, aged 60, was referred to the hospital from the dispensary because of nuclear cataract in each eye

April 2, 1915, O S small iridectomy

Oct 25, 1915, preliminary capsulotomy with Ziegler *knife*

Oct 26, 1915, no reaction, no pain Lens extracted under local anesthetic Recovery was prompt and uneventful The eye was looking fine when patient left the hospital, but there was some capsule within the pupil that would eventually require a discission The patient was not seen again until February, 1916 Several months after leaving the hospital she had an injury to this eye by a severe blow upon it The eye was inflamed and painful for a considerable time, but she failed to report to the hospital and had no treatment When she was seen in February the pupil was entirely covered with a dense capsule and was displaced somewhat upward

March 1, 1916, discission of the capsule and pupillary edge of iris was done with the Ziegler knife, and a clear central *pupil obtained I am unable as yet* to report what the final vision is with this patient

New England Building

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS JACKSON AND BRUNER

Dr William E Gamble, Chicago The study of the conjunctival flora, with extermination of the pathologic varieties before operation and the use of the limbal puncture has reduced the danger of panophthalmitis almost to the vanishing point, however, the complications of this operation the increased intra-ocular tension, the low grade inflammation of the uveal tract as shown by ciliary injection and occasional shock are the complications that give much apprehension to the surgeon The repeated operations, the thickened 'after cataract," which the retained cortex in the capsule sometimes produces, and the long interval before restoration of sight are difficulties which in the nature of things cannot be avoided Crystalline lenses react so differently to the traumatism of the knife that the only safe procedure, as Dr Jackson pointed out, is to make a simple puncture of the capsule the first time The knowledge gained by this reaction is about the only guide we have as to the amount of discission the eye will safely stand in future needlings The limbal puncture much reduces the force applied to the lens in making discission or dilaceration of the capsule as compared with that exerted by the needle when the puncture is through the clear cornea and should always be elected when one needle is to be used This reduction in force in producing the opening in the capsule for discission of the lens is of great importance, since the least possible force exerted on the lens sometimes subluxates it Most instruments for this purpose are too thick, producing too large an opening and rendering impossible the keenest cutting edge I prefer a worn out cataract knife with the edge dulled a short distance from the point Discission, per se, is clearly indicated in children and young adults with high myopia and clear and cataractous lenses, with laminar cataract complicated with myopia and choroidal changes, in all cases in young adults or somewhat older individuals where a sudden reduction in intra-ocular tension from corneal incision would endanger the integrity of the eye We are confronted at times with the complication of the nucleus of the lens developing early Until we are able definitely to determine the absence of a well formed nucleus, the field of usefulness of discission alone, in adults, will not be greatly enlarged and is not the operation of choice

Instead of tentative needlings over a considerable period of time, a thorough breaking up of the lens should, in my judgment, be done at one operation, followed in twenty-four to forty-eight hours by linear extraction The lens can usually be removed by milking it out, aided by pushing back *the posterior lip of the wound with a grooved director,* thereby allowing the lens debris to ride out over it, and by irrigation of the anterior chamber In older patients, if a small nucleus is formed this can readily be picked out on a sharp hook and oftentimes can be removed by irrigation

As to the patient remaining in bed with both eyes closed after this operation, my experience leads me to think it unnecessary and that a day or two in bed is a sufficient length of time for the patient to be quiet. There is but little more reaction than from iridectomy and no more need for remaining in bed, as the coaptation of the lips of the wound is so perfect that the anterior chamber closes within a few hours. This operation should be elected in many cases where the regular cataract extraction is now practiced, especially in traumatic cataract and other forms of monocular cataract. In senile cataracts coming on at an early age, if operated in this manner the greatest care should be used to remove all of the cortex, for I think it is an experience that most of us have had that some of these cases do not do well after operation. Low grade iritis of plastic type develops producing "after cataract."

Dr. Homer E. Smith, Norwich, N. Y.: I agree with the essayist that the value of any operation must be judged not only by the results at the hands of its originator but of other men as well. Two years ago I presented before this section a paper in which were tabulated the results of 180 extractions reported by thirty-nine operators, of which 91 per cent. were successful, 6 per cent. partial failures and only 3 per cent. total failures. Taking into account unfamiliarity with a new procedure, and comparing the statistics of results in fully mature and operable cataracts with the percentages above given and in what is admittedly a more difficult and dangerous operation it will be seen that this method does not suffer by comparison. There is another factor in the case and which militates against a proper judgment of the value of a new operation and that is that operators are not content to follow exactly the procedure as laid down by its originator but must try what they think to be improvements, not realizing, perhaps, that what they consider such have been already tried and rejected. If the contention of the originator be correct that the lens capsule is held tense by the reefing lines of the zonula, then only through a large and ample capsulotomy can the capsule roll back fully and allow entrance of the aqueous between capsule and cortex to separate one from the other. The anterior chamber is crescentic in cross section and at the extreme periphery the space diminishes to zero, even with a 2 mm. blade one must press back the lens slightly to begin or end the incision properly. With a blade longer than this an insufficient cut is made and then the wound gapes only and the desired result is not attained. Much depends also on the shape and sharpness of the blade, if too pointed it catches in and may dislocate the lens, this will happen also if it is not superlatively *cutting* sharp clear up to the point. If capsulotomy is properly done no capsule remains in the pupillary area and there can be no use for capsule forceps. Only on the anterior capsule are there nucleated lens fibers, the posterior capsule has no epithelium, and if this portion of the cortex is not affected by the capsulotomy it simply means that there was an insufficient division of the capsule. Experience has convinced me of the advantages of a preliminary capsulotomy as compared with capsulectomy or that immediately preceding the delivery of the lens, when properly performed, and if an interval of six or more hours is allowed to elapse between the capsulotomy and the extraction proper, a separation between capsule and cortex will result and so make immediately operable cataracts in any stage of opacification, and the delivery of the lens, mature or immature, is cleaner and easier than by any other method.

Dr. Lee M. Francis, Buffalo: Dr. Jackson in his discussion of Case 2 speaks of "oozing of lymph from Schlemm's canal." I am under the impression that the most recent observers regard Schlemm's canal as a venous and not a lymph channel. Concerning Dr. Bruner's paper: My experience with the Homer Smith method of preliminary capsulotomy covers between twenty and twenty-five cases. I find that one is aided a great deal in making the preliminary capsulotomy by using a + 3.00 lens with a 3 D. prism base in and getting down close to the eye to introduce the capsulotome. Since adopting this procedure, I have to make my incision with greater precision. I have met with three complications: First, owing to the swelling of the lens, the production of a very shallow anterior chamber makes the corneal incision rather difficult; second, bulging forward of the iris on the knife so that it is difficult to escape it in making the incision; third, spontaneous expression of the lens by the patient on completion of the corneal incision. In one case this occurred while I was changing my instruments. I have been unfortunate in having to contend with a great deal of remaining debris and I have not been so sure that the operation offers any great advantage in this respect, although it is difficult to judge in so small a series.

Dr. Harold Gifford, Omaha: There is a certain amount of misconception as to the position of Dr. Smith with reference to preliminary capsulotomy. From my conversation with colleagues I judge that a number of men believe that Dr. Smith was the first to suggest preliminary capsulotomy for cataract extraction. Of course, it is as old as the hills. About the first ophthalmic article I ever read was one by Steffen of Frankfurt. In it he spoke of doing preliminary capsulotomy as a regular thing with unripe cataracts. But the feature of Smith's operation is the extreme extent of the incisions in the capsule. In this it differs from anything which preceded it. I have tried this procedure, not with Smith's knife, however, but in the cases in which I have tried it the complications have been such that I have not been encouraged to continue it. I met with two forms of complication, one such as was mentioned by Dr. Francis. He did not speak of having glaucoma, but the fact is I got glaucoma within a very short time after the operation; in one case severe pain set in within an hour and the chamber got very shallow, and I had to extract the cataract under adverse circumstances. It is almost the rule to have increased tension and a shallow chamber within twelve hours after the operation. One objection is that if we do as Smith directs, we go to the hospital twice: we go in the morning to do the capsulotomy and in the afternoon to do the operation. If you wait twenty-four hours you are very likely to have glaucoma and must extract at a disadvantage. In one of the cases in which I had this experience the eye was markedly glaucomatous, there was no anterior chamber. I had to enlarge the incision with a scissors. I extracted all of the cortex which apparently was opaque, and then after twenty-four hours there was found a large sheet of opaque matter that had been transparent when I made the extraction. This extensive capsulotomy does not always get all of the cortex opaque and ready to come out. My experience, therefore, has convinced me that it is simpler to use the capsule forceps, no matter what the age of the lens, and extract the lens without reference to its maturity or immaturity.

Dr. S. D. Risley, Philadelphia: I agree with Dr. Jackson as to the feasibility of the removal of cataract by absorption following repeated discissions of the lens prior to middle life in selected cases. The objection to its frequent adoption is not only the danger inherent in frequently repeated operations, but the great inconvenience to both patient and surgeon caused by the prolonged detention in the hospital awaiting the slow absorption of the released cortex in the anterior chamber after each discission. This makes the method particularly prohibitive with private patients living at distant homes, since it is not safe to permit their return to their homes during the intervals between operations. This is true even in the case of very young children with opaque or semi-opaque lenses and is increasingly more aggravating in patients at 40 or 45 years of age. To avoid these difficulties I have devised a procedure which I have employed with increasing satisfaction for ten years or longer in the various forms of cataract in children and young people, and a few times in high myopia. It materially lessens the hospital days and secures better ultimate results and with less danger. The pupil is dilated under cocain and atropia and a small Hayes-Ziegler knife is inserted at the upper corneal limbus and carried to a point on the lens capsule under the inferior pupillary border, a vertical slit is made in the capsule, extending to the pupil border above. In suitable light this is seen to widen into an elliptical opening in the capsule

The knife is then carried to the same point below and a deep cut made in the cortex along the line of incision in the capsule After twenty-four or forty-eight hours a keratome is entered at the upper corneal limbus and its point carried deeply into the lens at the upper border of the dilated pupil, cutting across the upper end of the capsule incision in the primary operation The keratome is then slowly, but partially, withdrawn, the point of the knife being pressed backward to cause the wound to gape and to prevent the prolapse of the iris The opaque and softened cortex is by this procedure allowed to escape over the anterior surface of the blade The rapidity of its delivery can be controlled by pressure exerted through the fixation forceps below, and the back of the blade above, if too rapid by traction with the forceps and release of pressure above The intra-ocular tension alone is usually sufficient to expel the cortex and must occasionally be controlled by traction with the forceps

Dr J G Dorsey, Wichita, Kan I have a case which illustrates part of the feature that Dr Jackson emphasizes regarding the swelling of the lens in the anterior chamber The case was one of traumatic cataract produced in a peculiar manner While shaking a banner a pin was projected into the eye, producing traumatic cataract When the patient came in there was considerable swelling of the cortex and the anterior chamber was largely filled with lenticular matter The eye was considerably inflamed, and although we knew that the pin was not sterile, we thought we would risk it rather than produce more trauma, and take the chances of further irritation After the absorption of the particularly abundant lenticular matter the case went on for several days, when suddenly the girl complained of shock or pain, nausea, etc, and on looking at the eye I again saw it filled with this same swollen lenticular matter The lens matter went on to absorption without further trouble There was no glaucoma It seemed to be an inflammatory condition Speaking of the needling preceding a cataract operation, my difficulty in the operation of Dr Smith has been in making my discission large enough I find difficulty in making the cross incision There was some difficulty with the knife, but the results have been very good in the few cases I have done

Dr. D C Loughery, Clarksburg, W Va I should like to report the case of a patient 17 years of age It was said that the child had lost its sight at 6 I cut across the lens capsule and extracted a remnant of lens A nucleus was found in the other eye, but I obtained better vision than I could have hoped for in a person ten years or more in that condition Four weeks ago I saw a man who received a blow across the eye with a bottle three or four days before He had a traumatic cataract The lens capsule was ruptured, and the iris was adherent to the cornea in the upper portion The eye had had no attention whatever I insisted on his going to the hospital but he went home, and four days later came back The lens had poured out and the anterior chamber was filled to the cornea He had no tension It is beginning to clear up so that he can see some I suppose the lens will not absorb completely, but the results are so far most excellent I do not know what the final result will be

Dr E J Bissel, Rochester, N Y I have performed the Homer Smith operation eight times There are two or three factors that I think need to be emphasized The first is that the section of the capsule should always be made by artificial light I use a Nernst lamp I think it is difficult to follow the depth of the incision by daylight I also use the Beebe binocular loup, which gives sharp detail The first time I did the operation I had an instrument of the pattern of Dr Smith s knife, but not made by the firm he suggested, and I found that the taper was not quite right, and lost some aqueous, which makes it difficult to make the second incision—the cross incision, but after getting the instrument just as he suggested I found no difficulty in making the capsule incision under the conditions I have named I have found difficulty in making the corneal section In two cases the iris was caught on the knife It is quite difficult to avoid that if the lens becomes much swollen I have done the preliminary capsulotomy in the late afternoon and the extraction in the morning, and in only one case has there been any increase in tension This patient developed pain in the night, and in the morning there was a severe glaucomatous condition The final result was very satisfactory The results in all cases have been good as regards vision I have done the operation less often recently There is great danger in cutting into the lens substance too deeply and getting too much swelling of the lens

Dr Clark W Hawley, Chicago About twenty years ago I reported several cases in which I did the same operation in a different manner—I made the incision horizontally instead of vertically, extending it clear across the capsule I used a knife which I inserted to its full size, then withdrew it partly and gently lifted the cornea and all the cortex will come out that has been softened I learned this method from an accident in the Chicago Shipbuilding Company's yards at Chicago In one case the entrance of a piece of steel into the eye cut the capsule clear across and the anterior chamber was filled with lens-matter I have since used this knife and this method and have had such good success that I have used it in all cases

Dr Mary Buchanan, Philadelphia I have employed the Homer Smith method in twenty cases In nineteen I used his own knife in the other case the Ziegler knife, but found that it was not so satisfactory I had to go in and assist the lens out, which I never do with the Homer Smith knife We have had two cases in which there was marked rise of tension In one the man came from the country and was in a hurry to get home, so against my advice my assistant did not do a preliminary iridectomy, as the pupil would not dilate By the next day there was a hard eyeball An iridectomy was immediately performed but the next day the tension was just as high as the day before We extracted the lens without accident and the man made a good recovery I saw him on my way to the meeting and he had ⅚ vision in that eye In the other case I did a preliminary capsulotomy at 4 p m and the extraction at 5 a m the next day, having been called up on account of the patient's pain in the night Since adopting the six hour interval between capsulotomy and extraction no glaucoma has resulted There is often a lot of cortex that looks gray in the pupil one or two days after the operation, but if the capsulotomy has been done as extensively as Smith advises, the aqueous humor takes care of the cortex I think out of the twenty cases I had to do a slight secondary operation once or twice, but there was only a little shred of membrane across the pupil and there was no difficulty at all in doing it

Dr G C Savage Nashville, Tenn I have done the Homer Smith operation quite a number of times I have not followed exactly the directions of Dr Smith I do not believe it is necessary to make the capsulotomy twenty-four hours before the extraction What is the purpose of the capsulotomy? Not that the lens may be ripened and made cloudy especially but it is that the aqueous humor may get into the layers of the lens fibers in contact with the capsule both before and behind Through the opening the aqueous humor has little trouble passing within the capsule and going entirely around the lens substance, loosening the contact I do the capsulotomy early in the morning, say about 8 or 9 o'clock, and then about six or eight hours later I extract the lens, with wonderful ease I have never done the Smith operation with anything ugly following, chargeable to the operation itself Every case except one has resulted spendidly, and the bad result in that one case was from a purulent inflammation which I am sure was due to autoinfection, which developed about thirty-six hours after the extraction I believe the safest operation for cataract, everything considered, whether in or out of the capsule, is the Homer Smith operation and I know it is the easiest operation of all of them The capsulotomy done early in the morning and the extraction late in the afternoon has not given time for the lens to swell to any great extent It has never swollen to a sufficient extent to interfere with the corneal incision as I do the operation I believe that, in senile cataract, it would be better to divide the operation into two stages These stages ought to be as close together as possible, and the only reason that there should be any time intervening is that there may be escape of aqueous through the puncture wound you have made in making a good capsulotomy, making the anterior chamber so shallow as to make the corneal incision very difficult, without waiting for the chamber to refill A capsulotomy can be better made when there has been no incision in the cornea When this is done freely—whether with the Ziegler, the Knapp or the Smith instrument—as Smith directs, the capsule will open widely If, on withdrawing the instrument in a senile case, the aqueous does not escape we can go ahead and take the lens out without trouble I believe if we would do the capsulotomy before making the corneal incision, we could more often do a simple extraction of the cataract in a more perfect sort of a way After the capsule has been opened, while you have the eyeball fixed in its position, if the pupil is sufficiently open you may take the spatula and make pressure on the eye below, completing the operation in almost half the time that must elapse if we make the incision, then the capsulotomy and then the extraction I am going to do the Homer Smith operation until the Hulen operation has been so perfected that there will be no necessity for leaving any capsule in the eye at all The large opening in the anterior capsule after the Smith method must greatly lessen the necessity for secondary operations

Dr Edward Jackson, Denver In reference to Schlemm's canal, some one within the last year published the result of his investigation, reaching the conclusion that it is a lymph space I think perhaps the most important evidence on the matter is that developed by Salzmann by ophthalmoscopy of the angle of the anterior chamber In his last paper on the subject he figures a line parallel to the periphery of the anterior chamber which he takes to be caused by Schlemm's canal, rather darker than the sclera, and varying as to how much darker In only two cases has it shown any pink color He believes that at times some blood may be mixed with the lymph, but generally it is simply a gray line, in contrast with the white sclera I have seen it With reference to the residence of the patient, of course discission is only applicable for patients who can come again and again, without having to travel very far and without serious inconvenience The cases I reported have all been treated outside the hospital They were not confined to the house at any time, except in one case The girl who suffered the most severe reaction, without rise of tension, and with symptoms of shock, and who has an abnormal eye, a congenital defect, was the only one seen outside the office One patient lived in a city nearly 100 miles away, and came to Denver for the operation, remaining two or three days—Saturday to Monday She had a rather important position I think at one time she was in Denver perhaps ten days, although at that time the reaction was over in two or three days Of course, the procedure is only applicable to those patients who can be kept under observation The early development of the nucleus I think is to be rather expected with an early development that runs very much the course of senile cataract Three of these cases were of that character They developed probably after some uveal disease, but without any iritic adhesions and without any evidence of active disease for several years None of them showed evidence of active uveal disease from the time the cataracts began to obscure the fundus, up to the time the view was cleared up, and I think none showed any extensive changes in the choroid since the cataract was cleared up All of the nucleus, even if well developed, can and will be absorbed if time is given after sufficient needling The point I would like to emphasize about the operation is that it is the size of the opening in the capsule that determines the danger of swelling, and of the lens material flowing into the anterior chamber, where it will cause either a rise of tension, or severe reaction without rise of tension, and the symptoms which we wish to avoid The penetration of the nucleus is not followed by any particular reaction If the nucleus is cut into pieces and fragments fall into the anterior chamber, you are practically certain to have reaction But if the nucleus is punctured, even clear to the center of the nucleus, at the first puncture, it does not add to the reaction that occurs, provided you have a small opening in the capsule It is an established point that it is safer to cut freely an opaque lens than a transparent lens, as regards danger from subsequent swelling

Dr W E Bruner, Cleveland I should have stated that I use homatropin before doing the preliminary capsulotomy, so as to get as large an opening in the capsule as possible I make the puncture as Dr Jackson does, through the corneal limbus In my experience I have been surprised at the small amount of reaction that followed I have done the capsulotomy in the morning, prepared to do the extraction of the lens later in the day if necessary

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RETINAL DETACHMENT IN HYDROPHTHALMIA *

ARNOLD KNAPP, MD
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It is surely striking that patients with congenital glaucoma apparently disappear from view after a certain length of time, for it is very unusual to find persons with this disease in middle life, though there are some reports of cases in which the process has been spontaneously arrested and some sight retained That these enlarged eyeballs are extremely susceptible to injury is natural, and unquestionably most of these eyes are enucleated after rupture following often a trivial injury It is even reported that this rupture can occur spontaneously Furthermore, the ectatic cornea in these glaucomatous eyes becomes easily infected and stands infection badly, so that a number of the eyes are probably lost from this cause

I have had an opportunity of observing clinically a case of hydrophthalmia in which a detachment of the retina occurred spontaneously, and the eye then went on to phthisis bulbi As this outcome is not mentioned in the textbooks, I deem it worthy of report

The patient, F B, aged 11, was brought to the Herman Knapp Memorial Eye Hospital, Nov 28, 1914, with the statement that both eyeballs were enlarged from birth and that the right eye was injured by a blow four years ago and subsequently removed The left eye was enormously enlarged with all the characteristics of hydrophthalmia The cornea measured 16 mm The vision was 5/200 With the tonometer the tension was slightly over 30, and after the use of pilocarpin it was reduced to 27 As the tension could be controlled with pilocarpin, and on account of the extreme ectatic condition of the eyeball, an operation seemed inadvisable, though it had been proposed at one of the other eye hospitals The patient was brought to us from time to time with practically no change in the condition, and with tension averaging 25, until March 19, 1915, when the eye was found to be unusually soft, and the vision greatly reduced The field was contracted to a small area around the point of fixation, in which the patient was still able to count fingers directly in front of the eye With the ophthalmoscope a distinct detachment of the retina could be made out, of the usual color without any evidences of a hemorrhage The pilocarpin was stopped and atropin was ordered The eye remained soft, and gradually became smaller and blind Nov 6, 1915, the eye was shrunken, and a cataract had developed to which the iris was adherent There was no light perception

Axenfeld[1] has reported a case which is similar to this, in which a detachment was discovered by the ophthalmoscope before phthisis set in Axenfeld

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June, 1916

[1] Axenfeld Ueber das Vorkommen von Netzhautablosung beim Hydrophthalmos, Klin Med f Augenh, 1903, xli

states that his is the first case in the literature in which this occurrence has been observed Cases in which a gradual shrinkage and phthisis bulbi have occurred in hydrophthalmic eyes have been reported, though it had not been possible to determine the cause

In finding a possible explanation, it is well to consider what becomes of glaucomatous eyes in general Many of these remain hard, undergoing the well known degenerative changes Others develop ectasias of the sclera and finally, according to Fuchs,[2] the termination of all glaucomas is a shrinkage of the eyeball which occurs after the eye has been hard for many years Operations on eyes which have been in a state of increased tension for a long time frequently show a fluid vitreous, as is sometimes demonstrated during operation on these eyes

It seems to me reasonable to assume, therefore, that in cases of hydrophthalmia the vitreous degenerates in the advanced stages of the glaucomatous process, and at a certain point or stage of degeneration conditions are present, sufficient to overcome the natural tendency of a glaucomatous eye against detachment, which produce a change from increased to decreased tension and a detachment of the retina

The possibility of a spontaneous detachment of the retina should be considered before deciding to operate on advanced cases of hydrophthalmia

10 East Fifty-Fourth Street

ABSTRACT OF DISCUSSION

Dr Don M Campbell Detroit I find little to discuss on the subject of detachment of the retina—hydrophthalmia Very few cases are reported and none in the textbooks There does not seem however, to be any reason why we should not have detachment of the retina in the hydrophthalmic eye except for the increased intra-ocular tension which would keep the retina closely applied to the underlying tissue Dr Knapp states that the possible detachment of the retina is bound up with the fluid vitreous and the change from the hard to the soft eye It has occurred to me that the cause of the change of the eye from hard to soft may be the cause really of the detachment of the retina and also of the decreased tension We can, I believe, only judge of this subject from analogy There is no pathologic material, so far as I have been able to find, to cover the explanation of the passage of a hard eye to a soft one, but we do know that in these cases of buphthalmos or hydrophthalmos certain changes take place in the anterior segment of the eyeball which may take place in the posterior segment and may serve to explain the softening and detachment We know that in anterior staphyloma the choroid and sclera gradually become thinner, that eventually at areas in the anterior staphyloma the sclera breaks through and disappears entirely In a similar way we may have the same thing take place in the posterior part of the eyeball, although we have no observations of an anatomic character to bear that out There is an analogous condition in the ciliary region in buphthalmos, a separation of the iris from the ciliary region a condition which Fuchs refers to as a spontaneous dialysis There is also in the cornea of buphthalmic eyes a certain anatomic condition which has been observed that offers another explanation of the possibility of a detachment of the retina It has been found that in hydrophthalmic corneas there is a rupture of Descemet's membrane therefore it is not at all unlikely that the retina, which is more delicate than the elastic membrane of the cornea might also be the seat of minute ruptures from its distention We have, then, these two possibilities resulting from analogy There is a partial rupture of the sclera posteriorly, overlaid by a retina which has undergone minute rupture also, and when we add to those the fluid vitreous, it is not a great flight of imagination to conceive at least that the fluid vitreous might find its way through the retinal tents and produce detachment in these hydrophthalmic eyes It seems that a possible explanation of this spontaneous detachment would be along the lines, first, of a fluid vitreous, second rupture of the sclera, or a sclera very much weakened behind the retina, and third, the slight ruptures which might occur in the retinal tissue from its extreme distention in these highly distended eyeballs This is purely theoretical and cannot at the present time be substantiated by anatomic research At the same time it does not seem to be an unusual explanation Of course, there are comparatively few buphthalmic eyes in that condition long enough to be observed The cornea on the lens become more or less hazy and we cannot observe the interior of the eye

Dr T B Holloway Philadelphia Dr Knapp's case well illustrates the contentions of Axenfeld, who believes that retinal detachment is often the determining factor in the production of blindness in cases of buphthalmos Axenfeld has emphasized this point and further states that the detachment is promptly followed by reduction in the ocular tension In speaking of spontaneous cure in these cases, he believes this may be in certain instances hereditary At the Overbrook School for the Blind I have under observation at the present time eight children who have been affected with buphthalmos, and some of these have been under observation for five or six years The first case, which I think is probably the only one, had a retinal detachment The patient was first seen in 1909, and in 1911 the detachment was observed The difficulties in studying these advanced cases of buphthalmos will be appreciated when we recall the searching movements, so frequently present, the changes that develop in the cornea as the result of ruptures in Descemet's membrane, the development of cataractous changes, and possibly diffuse opacification of the cornea In the cases at Overbrook School, several show marked decrease in tension in one or both eyes, and I can recall instances where the eye when first observed had increased tension, and then gradual and progressive decrease in tension developed with gradual atrophy of the eye

A CASE OF CEREBROSPINAL SYPHILIS ASSOCIATED WITH PNEUMOCOCCIC MENINGITIS

E M Hammes, M D, St Paul

Marked advances in the diagnosis of organic nervous diseases have been made in the past few years This is in a great measure due to the careful and frequent studies of the spinal fluid in our obscure neurologic cases The importance of Nonne's four tests, to which may be added a fifth, Lange's colloidal gold test, are demonstrated in the following case The combination of cerebrospinal syphilis with pneumococcic meningitis seemed of sufficient interest for publication

A woman, aged 21, single, domestic with negative family and personal history except for an appendectomy in 1911, stated that about two years ago she had a sore on her hand, which the doctor pronounced a gonorrheal infection Syphilis was denied The present complaint began about Jan 10, 1915, when the patient developed an abscess on her right thumb which was very painful This continued to suppurate slightly for one week and January 17 the abscess was lanced and drained The evening previous, the patient developed severe headaches and shortly afterward had a general convulsion She had another one, January 18, and her headaches since then have been mostly frontal and bilateral

I first saw her January 19, when she complained of severe frontal headaches, and appeared somewhat drowsy and confused The physical and neurologic examination at this time were negative except for an abscess on the right thumb which was draining freely The temperature was around 100 F for two days, and then gradually became normal and has remained so The pulse varied between 75 and 100 Leukocytosis was 12,200, blood pressure 122 mm Hg, urine normal

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[2] Fuchs Lehrbuch der Augenheilkunde Ed 10 p 445

A diagnosis of metastatic involvement of the brain following the infection of the thumb was suggested

During the night of January 19 she had ten major convulsions, and in the forenoon of January 20, she had at least twenty more, and it seemed as if she would pass into a status epilepticus These convulsions were jacksonian in character, beginning with spasms of the left face, while the eyes were rotated to the left and upward The spasm soon involved the left arm and leg, after which it became generalized In an interval between convulsions, January 20, we performed a lumbar puncture and drew oft about 8 c c of clear spinal fluid under pressure This gave positive Nonne and Noguchi tests, a lymphocytosis of 12 per cubic millimeter, and a positive Wassermann The colloidal gold curve was suggestive of cerebrospinal syphilis The Wassermann in the blood was also positive The neurologic examination at this time gave a bilateral Babinski and a mild optic neuritis, more marked on the right side The Babinski on the left side disappeared, but on the right side was still present one week later All the other neurologic findings were negative A diagnosis of cerebrospinal syphilis was made The patient was given six intravenous injections of 0 9 gm neosalvarsan each, at intervals of ten days, and made a clinical recovery The Wassermann tests in the blood and spinal fluid were still positive One month later I again saw her, when she had developed an apparently similar condition to the previous one

Her sister gave the following history Since leaving the hospital, she has been perfectly well until two days ago, when she complained of nausea and headache Soon after she had a chill, and the following day had a convulsion and became unconscious At the time of the examination, she was semiconscious, and had all the manifestations of an acute meningitis There was a rigid neck, Kernig sign, and increased reflexes The temperature was 103 F, pulse 120, respiration 35 Aside from a lobar pneumonia of the left lower lobe, the physical examination was negative A lumbar puncture was performed, the spinal fluid was turbid, loaded with leukocytes and the *Diplococcus pneumoniae,* the globulin test was strongly positive The colloidal gold test showed a discolorization in the last five tubes, such as we get in suppurative meningitis The condition gradually grew worse and the patient passed into a state of coma and died Postmortem examination was not permitted

The interesting feature of the case to me was the change in the colloidal gold curve in relation to the nervous syphilis and the pneumococcic meningitis During the acute phase of the cerebrospinal syphilis, the colloidal gold curve was 1124300000 During the pneumococcic meningitis the curve was 1121134421 I regret that we neglected to make a Wassermann test of the last spinal fluid examined

1019 Lowry Building

The Civilian in Army Practice—People sometimes imagine that a practicing physician can be transformed into an army surgeon merely by putting a uniform on him I was not lacking in ordinary intelligence and was willing to work, but I was utterly without training To get two churches ready as hospitals I had to have beds, mattresses, sheets, pillow-cases, chairs, tables, kitchen utensils, knives, forks, spoons, peppers and salts, all sorts of crockery and other necessities for a dining room, all the drugs, appliances and instruments needed for 200 sick and wounded men, I needed orderlies, cooks and the endless odds and ends of things which go to make up a well organized hospital I did not know how to get a single one of these requisites As to drugs, I did not know whether to order 6 ounces or a gallon of laudanum, an ounce or two or a pound or two of opium, and I was in utter darkness as to the mode of getting any of the other things from a teaspoon to a cook However, I inquired and as soon as I learned how, I set myself to work For two nights I slept only about three hours each, and I had the satisfaction of reporting to Dr Letterman at the end of three days, instead of five, that I was ready On the fourth day I had 100 wounded men in each hospital—W W Keen, Addresses and Other Papers, 1905

Therapeutics

BLOOD PRESSURE

(Continued from page 203)

VENOUS PRESSURE

The venous pressure, after a long neglect, is now again being studied, and its determination is urged as of diagnostic and prognostic significance

Hooker[10] says there is a progressive rise of venous pressure from youth to old age He has described an apparatus[11] which allows of the reading of the blood pressure in a vein of the hand when the arm is at absolute rest, and best with the patient in bed and reclining at an angle of 45 degrees He finds that just before death there is a rapid rise in venous pressure, or a continuously high pressure above the 20 cm of water level and he believes that a venous pressure continuously above this 20 cm of water limit which is not lowered by digitalis or other means is serious, and that the heart cannot long stand such a condition These dangerous rises in venous pressure are generally coincident with a fall of systolic arterial pressure, although there may be no constant relation between the two He also finds that with an increase of venous pressure the urinary output decreases This, of course, shows venous stasis in the kidneys as well as a probable lowering of arterial pressure

Clark[12] did not find that venesection prevented a subsequent rapid rise in venous pressure in dire cases From his investigations he concludes that a venous pressure of 20 cm of water is a danger limit between compensation and decompensation of the heart, and a rise above this point will precede the clinical signs of decompensation

Hooker also found that there are daily variations of venous pressure from 10 to 20 cm of water, with an average of 15 cm, while in sleep it falls 7 or 8 cm

It seems probable that there may be a special nervous mechanism of the veins which may increase the blood pressure in them as epinephrin solution may cause some constriction

Wiggers[13] describes a method of taking and interpreting the supraclavicular venous pulse He also[14] carefully describes the readings and the different phases of normal arterial pulse, and urges that it should be remembered that "the pulse as palpated or recorded from any artery is the variation in the arterial volume produced by the intra-arterial pressure change at that point"

A quick method of estimating the venous pressure by lowering and raising the arm has long been utilized The dilatation of the veins of the back of the hand when the hand is raised should disappear, and they should practically collapse, in normal conditions, when the hand is at the level of the apex of the heart When the venous pressure is increased, this collapse will not occur until the hand is above the level of the heart Oliver[15] found that the venous pressure denoted by the collapse of the veins may be shown approximately in millimeters of mercury by multiplying by 2 each inch above the level of the heart in which the veins collapse When a normal person reclines after standing there is a fall in venous pressure, and when he again stands erect there is an increase in venous pressure

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[10] Hooker Am Jour Physiol, March, 1916

[11] Hooker Am Jour Physiol., 1914 xxxv, 73

[12] Clark, A D A Study of the Diagnostic and Prognostic Significance of Venous Pressure Observations in Cardiac Disease, Arch Int Med, October, 1915, p 587

[13] Wiggers, C J The Supraclavicular Venous Pulse in Man, The Journal A M A, May 1, 1915, p 1485

[14] Wiggers C J The Contour of the Normal Arterial Pulse, The Journal A M A, April 24 1915, p 1380

[15] Oliver Quart Med. Jour, 1907, i, 59

Bailey[16] states that in interpreting pulsation in the peripheral veins, it should not be forgotten that they may overlie pulsating arteries Pulsation in veins may be due also to an aneurysmal dilatation, or to direct connection with an artery As the etiology in many instances of varicose veins is uncertain, he thinks that they may be caused by incompetence of the right heart, more or less temporary perhaps, from muscular exertion This incompetence being frequently repeated, peripheral veins may dilate Moreover, the contraction of the right heart may cause a wave in the veins of the extremities, and he believes that incompetency of the tricuspid valve may be the cause of varicosities in the veins of the extremities

NORMAL BLOOD PRESSURE FOR ADULTS

Woley,[17] after studying the blood pressure in a thousand persons, found that the systolic average for males at all ages was 127 5 mm, while that for females at all ages was 120 mm He found the average in persons from 15 to 30 years to be 122 systolic, from 30 to 40, 127 mm, and from the ages of 40 to 50, to be 130 mm

Lee[18] examined 662 young men at the average age of 18, and found that the average systolic blood pressure was 120 mm, and the average diastolic 80 mm Eighty-five of these young men, however, had a systolic pressure of over 140 It is not unusual to find that a young man who is very athletic has an abnormally high systolic pressure

Barach and Marks,[19] in a series of 656 healthy young men, found that the systolic pressure was above 150 in only 10 per cent, and that in 338 cases the diastolic pressure, read at the fifth phase, did not exceed 100 mm in 96 per cent

Nicholson[20] believes that with a low systolic pressure and a large pressure pulse there is probably a strong heart and dilated blood vessels, while with a low systolic pressure and a small pressure pulse the heart itself is weak, with also, perhaps, dilated blood vessels If there is a high systolic pressure and a correspondingly high diastolic pressure, the balance between the vessels and the heart is compensated as long as the heart muscle is sufficient He believes the velocity of the blood in the blood stream may be roughly estimated as being equal to the pressure pulse multiplied by the pulse rate

Faber[21] examined 211 obese patients, and in 182 of these there was no kidney or vascular disturbance In 52 per cent of these 211 persons the systolic pressure was under 140, while in the remaining 48 per cent it ranged from 145 to 200 mm

BLOOD PRESSURE IN CHILDREN

May Michael,[22] after a study of the blood pressure in 350 children, came to the conclusion that the blood pressure in children increases with age principally because of the increase in height and weight, as she found that children of the same age but of different weights and heights had different blood pressures Sex in children makes no difference in the blood pressure, it being determined by the height and weight

Judson and Nicholson[23] made 2,300 observations in children of from 3 to 15 years of age, and found there was a gradual increase in the systolic blood pressure from 3 to 10 years, and a more rapid rise from 10 to 14, with a rapid elevation during the fourteenth year, or the age of puberty The systolic pressure varied from 91 mm in the fourth year to 105 5 in the fourteenth year, while the diastolic pressure remained almost at a uniform level The pressure pulse, therefore, increased progressively with the increase of the systolic pressure

BLOOD PRESSURE AND INSURANCE

An epitome of the consensus of opinion of the risk of accepting persons for insurance as modified by the blood pressure is presented by Quackenbos[24] Some companies have ruled that at the age of 20 they will take a person with a systolic pressure up to 137, at the age of 30 up to 140, at the age of 40 up to 144, at 50 up to 148, and at 60 up to 153, although some companies will not accept a person who shows a persistent systolic pressure of 150 Quackenbos says that when persons with higher blood pressures than the foregoing have been kept under observation for some time, they sooner or later show albumin and casts in the urine In other words, this stage of higher blood pressure is too frequently followed by cardiovascular-renal disease for insurance companies to accept the risk

On the other hand, too low a systolic pressure in an adult, 105 mm or below, should cause suspicion of some serious condition, the most frequent being a latent or quiescent tuberculosis Such low pressure certainly shows decreased power of resistance to any acute disease

Statistics prove that there are more deaths between the ages of 40 and 50 from cardiovascular-renal disease, that is, from heart, arterial and kidney degenerations, than formerly Whether this is due to the high tension at which we all live, or to the fact that more children are saved and live to middle life, or whether the prevention of many infectious diseases saves deficient individuals for this middle life period, has not been determined Probably all are factors in bringing about these statistics

While the continued use of alcohol may not cause arteriosclerosis directly, it can cause such impaired digestion of foods in the stomach and intestine, and such impaired activity of the glands, especially the liver, that toxins from imperfect digestion and from waste products are more readily produced and absorbed, and these are believed by some directly or indirectly to cause cardiovascular-renal disease Hence alcohol is an important factor in causing the death of persons from 40 to 50 years of age

The question of whether or not a person smokes too much, and what constitutes oversmoking, will soon be asked on all insurance blanks As tobacco almost invariably raises the blood pressure, and when the blood pressure again falls there is again a craving in the man for the narcotic, it must be a factor in producing, later in life, cardiovascular-renal disease Hence an increased systolic blood pressure must be in part interpreted by the amount of tobacco that the person uses

(To be continued)

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[16] Bailey Am Jour Med Sc May 1911 p 709

[17] Woley H P The Normal Variation of the Systolic Blood Pressure The Journal A M A, July 9, 1910 p 121

[18] Lee Boston Med and Surg Jour Oct. 7 1915

[19] Barach J H and Marks W L Blood Pressures Their Relation to Each Other and to Physical Efficiency Arch Int. Med April 1914 p 648

[20] Nicholson Am Jour Med Sc. April 1914 p 514

[21] Faber Ugeskrift f Læger June 10 1915

[22] Michael May A Study of Blood Pressure in Normal Children Am Jour Dis Child April 1911 p 272

[23] Judson C F and Nicholson Percival Blood Pressure in Normal Children Am Jour Dis Child October 1914 p 257

[24] Quackenbos New York Med Jour May 15 1915 p 999

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SATURDAY, JULY 29, 1916

THE QUESTION OF PROTECTIVE ENZYMES IN THE BLOOD

Not long ago, in a review of certain features of the so-called Abderhalden reaction, attention was directed to the accumulating evidence of its nonspecificity[1] The original claims made for the reaction have given rise to extensive series of investigations on the proteolytic enzymes of blood The fundamental question is whether protein-splitting capacities develop in the blood in response to the introduction of foreign protein so that the serum will cause digestion when it is allowed to act on the protein injected Much of the controversy has centered in the efficiency of the experimental technic employed For this reason nearly all recent investigators in this domain have attempted to apply methods which will be reasonably devoid of sources of error and free from the bias of personal judgment

At the University of Pennsylvania, Hulton[2] has lately tested the response of rabbits to a number of well-characterized isolated proteins, including protamin, casein, Bence-Jones protein, phaseolin, edestin, gliadin, soy bean globulin and lactalbumin The results show plainly in all cases, to quote the investigator, that under the conditions of the experiment there is practically no digestion with the blood of the injected animal in excess of that which takes place with the serum of the normal control animal The greatest amount of digestion takes place in the case of the Bence-Jones protein and milk albumin, which would naturally be expected, as these two proteins are more nearly related to mammalian proteins It is further stated that the results would also lead one to suppose that the blood of the rabbit possesses to a slight degree proteolytic activity, but that this activity toward a particular protein is not increased by injecting the animal with that protein The criticism might be offered that these proteins are too foreign, but if the reaction must be discriminated on the basis of the protein being just foreign enough, it would seem that the possibility of usefulness becomes remote

There is at present no reason for believing that the normal hydrolysis of the protein of the body occurs in the circulating blood Metabolic changes of the sort postulated presumably belong to the tissue cells Hulton offers a new view for consideration It is easily possible, she says, to imagine introduced foreign protein being taken into the body cells and hydrolyzed there, without any reaction appearing in the circulating plasma It may be shown that foreign protein introduced into the venous blood may be taken up by the tissues In like manner, it might be imagined that the placental cells entering the maternal circulation would be held and hydrolyzed within the tissues, and leave no trace of any enzymic or other activity in the circulating plasma In theory, therefore, one must separate the question of hydrolysis of foreign proteins from the question of the reaction of the maternal body to placental cells It is entirely possible that there is a specific reaction of the host to placental cells or to neoplasms, without this being a hydrolysis of their proteins in the circulating blood dependent on the presence there of enzymic activity This hypothesis leads us far away from the original contention on the basis of which the investigations of protective ferments have heretofore been planned

NEW STUDIES OF EXOPHTHALMIC GOITER

The confusion which exists in respect to the treatment of exophthalmic goiter is indicated by the remark[1] that men trained to think surgically are apt to regard exophthalmic goiter altogether too much from a surgical standpoint, and internists from the standpoint of internal medicine, while men who have had much experience are liable to follow the method of treatment with which they have been most successful in the past, without due regard to whether or not the present case fits into the frame of the former cases Physicians will therefore agree with Du Bois that "there is a great need of some purely objective test in hyperthyroidism to indicate the effect of treatment, since psychotherapy can modify profoundly all subjective symptoms At present the scientific status of the treatment of exophthalmic goiter is about at the point where we would be with diabetes if there were no laboratory tests for glucose and the acetone bodies"

What shall be the index to the severity and course of the disease? The rapidity of the heart, characteristic as it may be, is not a symptom confined to one disease, and a heart may be damaged beyond repair while other symptoms subside The thyroid gives uncertain and variable objective manifestations in exophthalmic goiter Other pathologic manifestations are present, but often are inconstant or unspecific The picture of disease presented by the syndrome of effects is a help to the clinician, yet it has an element of extreme uncertainty when one desires to establish unmistakably either progress or decline Clinical calorimetry, to which extended reference was made last week,[3] has demonstrated new possibilities of prognosis To those who are accustomed to think in terms of the energy requirement, says Du Bois,[2] exophthalmic goiter stands out *par excellence* as the disease of increased metabolism, and the increased metabolism stands out as the chief symptom of hyperthyroidism The determination of the heat production seems to afford the best index of the severity and course of the disease An increased basal metabolism is found with great regularity in exophthalmic goiter, and in severe cases reaches a level found in no other condition On the other hand, in cretinism and myxedema the metabolism is lower than in any other disease The administration of thyroid extract, particularly in myxedema, raises the heat production All other diseases in which metabolism is increased are easily distinguishable from exophthalmic goiter, and they never approach the extremes found in this condition The basal metabolism is higher than normal in youth, in fever, in lymphatic leukemia and pernicious anemia, in severe cardiac disease, and in some cases of severe diabetes and cancer It is lower than normal in old age, in some wasting diseases, and perhaps in some cases of obesity Diseases of the ductless glands other than the thyroid show in some cases an increase, in some a decrease, but these are comparatively small

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[1] The Specificity and Utility of the Abderhalden Reaction, editorial, The Journal A M A, April 8, 1916, p 1117

[2] Hulton, Florence The Formation of Specific Proteoclastic Ferments in Response to the Parenteral Injection of Foreign Proteins, Jour Biol Chem, 1916, xxv, 163

[1] Handbook of Therapy, Chicago, the American Medical Association, 1915, p 362

[2] Du Bois, E F Clinical Calorimetry, Fourteenth Paper Metabolism in Exophthalmic Goiter, Arch Int Med, June, 1916, p 915

From the standpoint just discussed, the measurements made by Du Bois with the Sage calorimeter are highly significant They throw light on some of the theories held in regard to the etiology of exophthalmic goiter Very severe cases show an increase of 75 per cent or more above the normal average, severe cases 50 per cent or more, and moderately severe and mild cases less than 50 per cent, while a few mild and several atypical cases, or cases in which operation has been performed, may be within normal limits In severe cases the warmth of the skin and sweating can be accounted for entirely by the necessity for the increased elimination of heat At least a part of the tachycardia is due to the increased metabolism, and perhaps it might be possible to reproduce the extreme tachycardia, the cardiac enlargement, emaciation and mental irritability if we were able to stimulate the metabolism of normal men for twenty-four hours a day over a period of months or years The specific dynamic action of protein and of glucose is within normal limits, and there is no consistent difference between the effects of protein in meat and an equal amount in milk and eggs One patient was able to derive 89 per cent of his calories from carbohydrate in an experiment when he was showing an alimentary glycosuria There is evidently no interference with the oxidation of carbohydrates

Using the level of the heat production ascertained by clinical calorimetry as an index of the effect of medical treatment, Du Bois and his colleagues conclude that there is as yet no proof that any conservative form of treatment causes a greater reduction of metabolism than mental and physical rest Ligation of the thyroid arteries with three out of the four patients studied caused a distinct rise in metabolism, the duration of which was uncertain On the other hand, rest in bed for a week or more caused a drop of more than 10 per cent

Many physicians of large experience will heartily agree with Du Bois that in the treatment of hyperthyroidism, "calorimeters and other forms of respiratory apparatus seem to be therapeutic nihilists" Mental and physical rest, he contends, is the surest means of securing the drop in the metabolism which indicates a diminution in the pernicious activity of the thyroid Psychotherapy is of some value, and this combined with rest may account entirely for the improvement following most of the so-called medical cures It is quite possible that some of the numerous current or now discarded procedures control some of the minor symptoms of the disease or render the major symptoms less apparent to the patient and his physician We cannot consider the patient to be anywhere near a cure until the metabolism has approached the normal We cannot consider a therapeutic agent to be curative unles it causes the metabolism to approach the normal more quickly than the tendency toward spontaneous improvement aided by mental and physical rest

The new studies of Du Bois ought to make it sufficiently clear, furthermore, that patients with exophthalmic goiter need large amounts of food In general he finds that they require from one and a half times to twice as much food as a normal person under similar circumstances The severity of the case and the degree of muscular activity must obviously be taken into consideration Unless food of high caloric value is given in large amounts, losses of body fat and protein may occur

In contrast with these effects of what we may tentatively speak of as hyperthyroidism, the conditions pertaining in hypothyroidism as exemplified in cretinism are equally striking One small cretin 36 years old produced about half the calories eliminated by children of his size As estimated by the surface area, his metabolism was about 20 per cent below the normal adult level Three and a half days of treatment with thyroid extract raised his heat production to normal

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[3] Clinical Calorimetry editorial THE JOURNAL A. M. A. July 22 1916 p 286

DEATH RATES OF CITIES

The comparison of the crude death rates of cities for the purpose of determining relative "healthfulness" has long been a favorite pastime for some newspaper writers, and even, it must be said, in some municipal health departments The complexity of the problem and the multiplicity of the factors involved, however, have deterred professional statisticians from attaching much importance to such comparisons The principal objection to the use of crude death rates—the annual number of deaths per thousand population—as a measure of healthfulness is that it takes no account of the age and sex distribution of the population Since the proportion of the sexes and of the population of each age group varies considerably in different places, and since the death rate in each group is different, it is plain that crude death rates may give quite misleading information as to actual conditions Two communities having identical death rates in each age group may have crude death rates widely apart if, for example, in one of the communities there is a marked preponderance of one age group, say the group from 15 to 24 years, in which the mortality is low An interesting attempt to meet this difficulty has been made by analyzing the vital statistics of certain American cities and comparing the death rates from specific causes, such as infant mortality, tuberculosis and typhoid fever[1]

Great differences are found among the fourteen cities chosen for comparison As might be expected, the rating in "healthfulness" differs according to whether the crude death rate or the "standardized" death rate corrected with reference to the age and sex distribution of the population is used Thus Los Angeles, which ranks fifth in the list based on crude death rates, jumps to second place (next to the lowest death rate) when considered in the order of the standardized death rates There are even greater differences in the order of the cities when arranged according to death rates from specific causes On the basis of the figures employed by Harmon, the city of Cincinnati holds a very good position (first) as respects typhoid, but very poor (eleventh) as respects tuberculosis Pittsburgh has a poor rating in general, but stands high with respect to tuberculosis New Orleans makes a poor showing with reference to typhoid and tuberculosis, but has the best record of all with regard to scarlet fever and whooping cough

Unfortunately, infant mortality could not be calculated satisfactorily for more than eight of the fourteen cities, owing to that crying disgrace of American statistical practice, the lack of adequate birth registration The incomplete figures available indicate that the divergence of ratings under this head is fully as great as in other cases It is curious that Buffalo should apparently suffer from a much higher infant mortality rate than St Louis, in view of the influence thought to be exerted on infant mortality by summer heat

It must be confessed that such analyses as the excellent one here cited are of limited value in determining the relative "healthfulness" of cities or the relative efficiency of health administration The factor of climate may be favorable to a low death rate from certain causes, but may conduce to a high death rate from others The city of Los Angeles presents the extreme case of a high death rate from tuberculosis due, *not to the insalubrious character* of the climate for persons with this disease, but to its advantageous nature Some puzzling questions are raised by certain figures in Harmon's summary, such as the great gap between the tuberculosis rating of Pittsburgh (second) and the pneumonia rating (fourteenth) of the same city In any given case it may be impossible to decide whether the high rate from specific infection is due to uncontrollable climatic conditions, to the inadequacy of public health measures, to the conditions existing in the neighboring outlying territory, or even in some cases to purely statistical variations, such as the local traditional methods of report and record

GASTRIC ULCER AND GASTRIC ACIDITY

Although the pathogenesis of gastric ulcer has long been associated in the minds of clinicians with the peculiar qualities of the gastric juice, a direct interrelationship is far from being demonstrated, and other etiologic factors must now be taken into account It is doubtless true that gastric ulcer may occur wherever gastric juice flows Whatever the relation between this secretion and the lesion may be, healing is apparently prevented in some way by the action of the gastric juice Sippy[1] has shown, in his treatment of gastric ulcer, that the gastric acidity appears to play an important rôle in establishing chronic ulcer The neutralization of the gastric juice by the continued administration of alkalies, accordingly, appears to facilitate the cure of a large number of chronic gastric and duodenal ulcers

To the varied conditions long regarded as possible factors aiding in ulcer formation, an added agency has demanded serious consideration in recent years The intervention of bacteria in some stage of the genesis of such necrotic areas has been brought into prominence Readers of The Journal will recall that Rosenow[2] produced chronic and acute gastric ulcers in dogs by intravenous injections of certain strains of streptococci He showed that pure cultures of streptococci isolated from gastric ulcers in man, dog, cattle or sheep, when injected intravenously into dogs and rabbits, produced typical gastric ulcers in a large percentage of the experiments Whether the chronicity of this type of ulcer is due entirely to the streptococcus infection, or to the combined action of the streptococci and the corrosive action of the gastric juice, has not been proved experimentally

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[1] Harmon, G E Quart Pub, Am Statistical Assn, 1916, xv, 157

[1] Sippy, B W Gastric and Duodenal Ulcer, Medical Cure by an Efficient Removal of Gastric Juice Corrosion, The Journal A M A May 15, 1915, p 1623

[2] Rosenow E C The Etiology of Articular and Muscular Rheumatism, The Journal A M A, April 19, 1913, p 1223 Elective Localization of Streptococci, Nov 13, 1915, p 1687

It has been asserted[3] that gastric ulcers can be produced quite uniformly in certain species by intravenous injections of the *Bacillus coli* A recent investigation of this subject, at the Hull Physiological Laboratory of the University of Chicago, by Hardt,[4] has failed to substantiate this behavior of the organisms of the colon type, but the work of Rosenow with streptococci actually isolated from gastric ulcers has been confirmed The availability of a fairly dependable method of creating ulcers has further given an opportunity to study the mooted question of the behavior of the gastric acidity when ulcers are present The extremely contradictory character of the statements hitherto made may be due to the fact that clinicians are usually dealing with a mixture of juices (bile, saliva and pancreatic and gastric secretions) in the specimens which they subject to analysis A refinement in the technic was introduced in the Chicago laboratory by examining the gastric secretion in dogs with a Pawlow stomach pouch, which prevents the admixture of the contents of the rest of the alimentary canal When gastric and duodenal ulcers were produced by streptococci as the result of Rosenow's procedure, it was found that there is no hyperacidity in the gastric juice under these experimental conditions Hypersecretion was rarely encountered Mechanical factors and corrosive action of the gastric juice were largely eliminated by the way in which the experiments were carried out Therefore the production and chronicity of the gastric ulcers must be dependent primarily on the virulence of the streptococcus
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[3] Steinharter Lancet Clinic 1914 iii 88 Bost Jour 1913 clxix 81 ι better pleased

[4] Hardt L. L. J Contributions to the Physiolo m more pleasing XXXIII The Secretion of Gastric Juice in Cases , ger is that while denal Ulcers Am Jour Physiol 1916 xl 314 may be growing

Dirt.—To the sanitarian dirt includes nan nothing It
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surroundings both in country and city

Current Comment

LIFE INSURANCE AND ALCOHOL

An interesting analysis of the experience of American life insurance societies in respect to the mortality among abstainers from alcohol, temperate users and moderate users is presented in the current bulletin of the city of New York health department[1] Dividing the policy holders into three classes according to whether they are total abstainers, temperate users or moderate but habitual users of alcohol, it is shown that the mortality of the first class is about 15 per cent less than that of the second, and about 25 per cent less than that of the third This much diminished mortality among total abstainers as compared with nonabstainers is marked even when the general section of a company's policyholders, that is, the nonabstainers, presents a mortality experience which is favorable as compared with that of other companies For example, in the case of one such company in 1906-1910, the mortality in the abstainers' section was 40 per cent less than that in the general section, and in the years 1911-1915, 35 per cent less Results are given of investigations into the subsequent history of those who have at one time drunk to excess and of those who have undergone an alcohol cure In neither case is the risk a good one from the insurance point of view The importance of these statistics is derived from the fact that they have not been collected for controversial purposes by parties holding a brief against alcohol, but are the figures by which commercial organizations, whose interest in the matter is purely financial, are guided in fixing premiums While there can be no doubt left in the mind of any one who reads
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MONTANA

ith Officers' Meeting—The City and County Health ers of Montana held their annual meeting in Miles City, July 10 and 11 under the presidency of Dr Arthur Morrow Kalispell at which Dr Victor C Vaughan, Ann Arbor, Mich, delivered an address on "The Eradication of Disease" Dr Joseph C Denney, Clydepark was elected president of the association, A N Allard Billings vice president, and Dr William F Cogswell Helena was reelected secretary

State Association Meeting—The thirty-eighth annual meeting of the Medical Association of Montana was held in Miles City, July 12 and 13 under the presidency of Dr Rudolph Horsky, Helena Kalispell was selected as the next place of meeting, and the following officers were elected President Dr John A Donovan, Butte, vice presidents, Drs Arthur Morrow, Kalispell, Robert H Beach, Glendive, and Arthur C Jones Butte, and secretary-treasurer, Dr Elmer G Balsam, Billings (reelected) The principal address of the meeting was delivered by Dr Victor C Vaughn Ann Arbor Mich, on 'The Protein Poison and the Part it Plays in Disease"

NEBRASKA

Personal—Dr Herschell B Cummings, Seward, has been reappointed a member of the state board of health——Dr William D Jack Omaha, has returned after six months' war service in Flanders

Health Secretaries Elect.—At the meeting for reorganization of the Board of Secretaries of the State Board of Health at Lincoln, July 12 Dr Charles T Burchard, Falls City was reelected president, Dr Herschell B Cummings, Seward was elected vice president, Dr E Arthur Carr, Lincoln was elected secretary, and Dr Lucien Stark, Hartington was reelected treasurer

New Hospital.—Messrs Charles L Coolidge and Charles L Houghton of Palmer have donated their entire properties, part available immediately and the remainder at their death, to the Coolidge Hospital and Sanatorium Association, Palmer, for the erection and endowment of a small hospital and sanatorium Other donations have been received from citizens of the village and surrounding country The building is to be of brick and will be ready about October 1 It is to be called the Coolidge Hospital and Sanatorium, after the principal donor

NEW YORK

Personal.—Dr Ross M Chapman, Binghamton, has been appointed assistant superintendent of the Government Hospital for the Insane, Washington, D C Dr Chapman is at present connected with the New York State Hospital, at Binghamton. He will fill a position that has been vacant for more than a year——Dr Bertis R. Wakeman, Watertown, district sanitary supervisor of the northern district for the state department of health, has been transferred to Hornell

Infantile Paralysis Up-State—The state health department announced July 21 that up to that date there have been in all 195 cases of infantile paralysis, with twenty-three deaths Governor Whitman has promised state health department officials additional funds to carry on the campaign against infantile paralysis Arrangements have been made for several additional diagnosticians, sanitary supervisors, nurses and assistants for Westchester, Ulster Orange and Sullivan counties The state department of health announces that in 1914 there were 224 cases of infantile paralysis in the state, with sixty-eight deaths, while in 1915 there were 261 cases and forty-seven deaths

Psychiatric Clinic for Convicts—With the return of Thomas Mott Osborne as warden to Sing Sing Prison, it is announced that one of the innovations will be the instalment of a complete psychiatric clinic, wherein old prisoners as well as new arrivals will undergo thorough mental examination The clinic has for its object the separation of the feebleminded and mentally disabled prisoners from the normal group The Rockefeller Foundation has contributed the money for this undertaking Dr Bernard Glueck, Washington D C will become resident psychiatrist, and will have a staff of assistants Mr Osborne announces that this is but the forerunner of a plan on which he is now working in cooperation with the National Committee on Prisons to turn Sing Sing into a great receiving station, where prisoners can be observed classified and then placed in the hands of experts to receive medical treatment and individual training which their particular cases demand

New York City

Change of Name.—The International Health Commission of the Rockefeller Foundation announces the change of its name to International Health Board of the Rockefeller Foundation.

Personal.—Dr Thomas A. Storey director of physical training in the College of the City of New York, has been appointed state inspector for physical training of the Military Training Commission for the state of New York.——Dr Elbert M Somers for about five years superintendent of the Brooklyn State Hospital has resigned to take effect August 1——Dr Abraham Sophian for many years in the research laboratory of the department of health has been engaged by Bridgeport, Conn to take charge of that city's campaign against infantile paralysis

Promotions at Rockefeller Institute.—The following promotions and changes have been announced for the Rockefeller Institute of Medical Research Dr Alphonse R. Dochez, hitherto an associate in medicine, has been made an associate member Dr Henry T Chickering has been appointed resident physician in the hospital to succeed Dr Dochez. Dr Louise Pearce and Dr Frederick L. Gates Montclair, N J, have been appointed associates in pathology and bacteriology Dr Oswald H Robertson has been appointed assistant in pathology and bacteriology and Mr Ernest Wildman, assistant in chemistry, Dr Roda Erdmann has been appointed associate in the department of animal pathology, Dr Rufus A. Morison, assistant in medicine and assistant resident physician, Dr John Northrop, assistant in the department of experimental biology, Dr Jean Oliver, assistant in the department of pathology and bacteriology, Dr Ernest W Smillie, fellow in the department of animal pathology, and Dr William D Witherbee assistant. Hardolph Wasteneys hitherto an associate in the department of experimental biology, has accepted an appointment as associate professor of pharmacology in the University of California

The Poliomyelitis Situation—The number of cases of poliomyelitis reported up to July 21 is 2,527, and the total number of deaths 519 The number of cases reported daily has been gradually decreasing during the past week, and though no positive statements are made, it is hoped that the epidemic is on the wane——The new cases reported, July 22, totaled 135, with 39 deaths Of the new cases 82 with 16 deaths occurred in Brooklyn, 23 with 10 deaths in Manhattan, 17 with 6 deaths in Queens, 8 with 3 deaths in Richmond, and 5 with 4 deaths in the Bronx On that date there were 1,294 cases of poliomyelitis in hospitals, including 826 in department hospitals, 144 in other city hospitals, 268 in private hospitals, and 56 at Swinburne Island The number of private hospitals cooperating with the department of health in caring for infantile paralysis is now twenty-four——Persons desiring to take their children out of the city are required to have permits from the department of health Certificates are issued provided the children do not come from infected districts and do not show any symptoms of contagious disease This ruling has been extended so that the certificate of a reputable physician who examines the child in his or her home will also be accepted The certificates are issued in triplicates, one being filed with the department of health, one sent to the health officer of the locality to which the child is going and one is kept by the parent or attendant accompanying the child

NORTH DAKOTA

New Medical Board Appointments—The following appointments on the State Board of Medical Examiners were announced July 15 Dr Gustavus J McIntosh, Devils Lake, to succeed Dr Francis Peake, Jamestown, Dr Joseph G Dillon, Fargo, to succeed Dr Albert W Skelsey, Fargo, and Dr George M Williamson, Grand Forks, reappointed At the meeting of the board July 15 the state license of Dr Heber Wilbur Coulter, Sharon, is said to have been revoked The license, issued by the board in 1913, was obtained through reciprocity with South Dakota and the board on investigation discovered that Heber Wilbur Coulter had apparently been licensed under the application of Herbert Coulter and was not the man certified by the South Dakota board Dr Coulter was notified to appear at the meeting and show cause why his license should not be appealed He did not appear, and the board therefore revoked his license to practice

PENNSYLVANIA

Personal—Dr James E. Silliman, Erie, has been elected medical director of the Pennsylvania Department of the Grand Army of the Republic——Dr Edgar M Green Easton, has been appointed a member of the advisory board of the state department of health to fill the vacancy caused by the death of Dr George W Guthrie, Wilkes Barre——Drs Astley P C. Ashhurst and John H W Hreine assistant surgeons at the Plattsburg Military Camp, have been advanced to the rank of first lieutenants Lieutenant Ashhurst has been assigned to the Sixth and Lieutenant Hreine to the Seventh Regiment.——Dr Joseph K. Weaver, Norristown, has been reappointed a member of the State Board of Prison Inspectors

Philadelphia

Physicians and Red Cross Work—A call was issued to 2 500 physicians of Philadelphia and the adjoining counties to attend a joint conference, with a view of enlisting in Red Cross work.

Infantile Paralysis Situation—Four new cases of infantile paralysis were reported in this city, July 20 Thus far one patient has died and the total number of cases reported to date aggregate eight, the largest number being reported on the date mentioned

To Aid Blind Soldiers—A state branch of the British French and Belgium Permanent Blind Relief Fund has been formed here. The work of this society is to administer aid to those who have been rendered blind by war The beneficiaries are to be natives of the countries mentioned Mr Barclay Warburton, Philadelphia, is chairman of the association and Mrs Joseph E. Widener has been named as vice president.

SOUTH DAKOTA

Hospital Notes—Plans for the new State Methodist Hospital at Mitchell are practically finished and the contract for construction will be let on September 1 A greater part of the funds needed for the building have already been raised——Dr James L Stewart Spearfish has begun the construction of a private tuberculosis sanatorium at Pringle

New Board Officers and Members—The governor has reappointed Dr Ernest W Feige, Huron, and Dr William E Daniels, Madison, members of the state board of health At the midsummer session of the State Board of Health and Medical Examiners held in Deadwood July 17, the following officers were elected president Dr Felix E. Ashcroft, Deadwood, vice president, Dr Ernest W Feige, Huron, and secretary, Dr Park B Jenkins, Waubay

VIRGINIA

Funds for Infantile Paralysis Fight Granted—The Board of Aldermen of Richmond, July 11, voted an appropriation of $1,998 asked for by Health Commissioner Ernest C Levy for preparation against infantile paralysis

New Hospital for Alexandria.—Ground was broken, July 14, for Alexandria's new hospital which will be located on the north side of Duke Street, between Columbus and Washington streets The land on which the hospital will be constructed was donated several months ago by Edward L Daingerfield A campaign to raise funds for the building was started in April, 1914 and the finance committee recently reported more than $40,000 in cash and pledges It is expected that the building will be ready for occupancy early next spring

Personal—Dr Sherwood Dix, Portsmouth has been appointed full time health officer of Norfolk County Dr Dix will in addition to his other work, be expected to make the school medical inspections which have heretofore been in charge of five physicians——Dr George Ben Johnston Richmond, was appointed a member of the state board of health July 1 Drs John B Fisher Midlothian, and Lewis E. Harvie Danville, have been reappointed members of the board——Dr Ennion G Williams Richmond, has been reappointed state health commissioner——Dr Ernest C Levy has been reelected city health officer of Richmond

CANADA

Hospital News—A cottage hospital has been opened at Beverley Alta It is the first hospital in that province to be established and maintained by a municipality——British Columbia recently adopted an amendment to the hospital act whereby if the hospital bill is not paid by the patient the municipality from whence the patient came must pay the charges and then collect the amount from the patient

Personal—Maj Rowland K. Kilborn, medical officer at the Royal Military College Kingston, Ont, has resigned on account of ill health He held the post for sixteen years——Dr J Russell Stanley has been appointed medical officer of health at St Mary s, Ont——Dr Henry E Young, Victoria, B C for several years minister of education and provincial secretary for that province, has been appointed secretary of the health department of British Columbia and provincial officer of health——Dr George T Wilson has been appointed medical officer of health and city bacteriologist for New Westminster, B C, in succession to Dr Alexander L McQuarrie who has gone overseas with the One Hundred and Twenty-First Battalion——Dr R. Eden Walker New Westminster B C, has been appointed coroner of that city——Dr George S Graham, pathologist and bacteriologist at the City Hospital, Boston has been appointed chief of the Vancouver General Hospital Laboratories——Lieut.-Col Robert M Simpson, Winnipeg, has been appointed assistant director of medical supplies at Camp Hughes——Maj Edward O Steeves Moncton, N B., has been given command of the military hospital at Aldershot Camp, N S——Maj Lewis E. W Irving, Toronto is in command of the Canadian division at the Woodcote Park Convalescent Hospital near Epsom England——Capt C J McMillan, Charlottetown P E I has been appointed second in command of the McGill Overseas Unit, which is in training in Montreal——Capt George G Corbet, St. John N B, is registrar at the Canadian Convalescent Hospital at Bearwood Park, Wokingham England——Capt. Harold Chaplin, St Johns, who was in the Newfoundland Naval Reserve, surgeon on the *Hampshire,* was lost when that vessel met with disaster off the Orkneys——Among recently recorded wounded at the front are Capt John Aylmer Reid Pinkerton Ont, Capt William L Shannon Vancouver, Capt J J Jamieson, and Lieut Edward V Sullivan, St. Stephen, N B——It is now officially announced that Capt. Walter R. W Haight, Toronto who was reported missing was found bayoneted in his hospital tent along with his entire staff

GENERAL

Successful Candidates for Navy Medical Corps—At the examination recently held in various cities throughout the United States the following named medical men successfully passed the examination for appointment as assistant surgeon in the Medical Reserve Corps, with a view to subsequent examination for appointment in the Medical Corps of the Navy James A Halpin M D Washington, D C, William D Heaton M D, Wahoo, Neb, Aubrey M Larsen, M D, Salt Lake City Lincoln Humphreys, M D, Argenta, Ark, T Edward Cox M D Cleveland, Arthur W Hoaglund, M D Minneapolis, Carroll H Francis, M D, Camden, N J, and Harold L Jensen M D, San Francisco

Infantile Paralysis—The total of cases in greater New York up to and including July 25 was 3 098, with 647 deaths, or 20 88 per cent The grand total for the country on the same date was 5 501 cases, with 850 deaths, a mortality of 15 44 per cent New Jersey and Connecticut have declared a quarantine against New York on account of infantile paralysis——The Rockefeller Foundation, July 15, donated $50,000 to be expended under the direction of a committee headed by the mayor of New York with Dr Simon Flexner, New York as vice chairman Five additional surgeons of the Public Health Service have been ordered to New York These are Surg William J Pettus, Charleston, S C, Surg Henry W Wickes Detroit, Surg Dana E Robinson Ellis Island (on leave), P A Surg R A Herring Louisville, Ky and Senior Surg Parker C Kalloch Portland, Me

Bequests and Donations—The following bequests and donations have recently been announced

Miss Hattie Newman superintendent of the Loofbourow Hospital Monroe Wis has been bequeathed the institution, free of all incumbrance, by the will of Dr Nathan A Loofbourow

Washington Home for Incurables $12 236 85 Children s Hospital Washington City Orphan Asylum Washington Home for Foundlings Washington Aid Association for the Blind and Ruppert Home each $8 157 89 and National Homeopathic Hospital, George Washington University Garfield Memorial Hospital German Orphan Asylum Central Dispensary and Emergency Hospital, and Eastern Dispensary Washington D C each $4 078 95 by a compromise between all the parties interested in the will of the late Theodore J Meyer Washington

For a Negro Tuberculosis Ward in the Charity Hospital, New Orleans a subscription of $3 500

Long Island College Hospital Brooklyn $20 000 Brooklyn Hospital $12 000 and Hospital of St Giles the Cripple Brooklyn, $10 000 by the will of Francis Ripley

New York Academy of Medicine, the residuary estate amounting to $119 179 and scientific books valued at $142 by the will of Dr Rudolph Witthaus New York

Mt. Sinai Hospital Montefiore Home and Hospital for Chronic Diseases New York and Zion House Buffalo each $1 000 by the will of Norbert Gunzberger

Visiting Nurses Association of Chicago an annuity of $2 400 Wesley Memorial Hospital and United Charities of Chicago each an annuity of $2 000 and Ilinois Children s Home and Aid Society an annuity of $1 000 by the will of Norman W Harris Chicago

Death of Sir Victor Horsley—Sir Victor Alexander Haden Horsley the noted brain surgeon and specialist in cerebral localizations died in Mesopotamia July 16 from heat stroke Dr Horsley was born in Kensington in 1857, received his M B and B S with the gold medal in surgery in 1881 from University College and the F R C S England, in 1883 He received the Fothergill Gold Medal of the Medical Society of London, and the Lannelongue International Gold Medal for Surgery in 1911 He was professor of pathology in University College London, from 1893 to 1896 professor of clinical surgery until 1906 and thereafter professor emeritus of clinical surgery surgeon to the National Hospital for Paralysis and Epilepsy consulting surgeon to University College Hospital professor-superintendent of the Brown Institution from 1884 to 1890 secretary to the Royal Commission in Hydrophobia Fullerian professor at the Royal Institution, and president of the pathologic section of the British Medical Association in 1892-1893 He made many important contributions to the literature of epilepsy brain anatomy and surgery the thyroid and pituitary bodies and other subjects pertaining to surgical neurology While Sir Victor Horsley was a great scientist he also took deep interest in medicosocial affairs To him belongs the credit of the reorganization of the British Medical Association when it was changed into a direct systematic representative body He early saw the advantages of this plan and urged them, notwithstanding the criticisms of the conservative members of the association and eventually after much tribulation and obloquy, carried his point, with the greatest possible resultant good to the organization He was the first chairman of the representative body—comparable to the House of Delegates of the American Medical Association—and held the position for some four or five years He was aggressive in pushing what he believed was right, and consequently made enemies Sir Victor was an ardent patriot, served with distinction in the Boer War, was a colonel of the Royal Army Medical Corps, and was on duty with the Tigris expedition in Mesopotamia when he was stricken by heat and died

FOREIGN

Tuberculosis Fight in China—Recent reports from missionaries in China show that the antituberculosis fight has extended into that country James M Yare, a missionary in Chengtu, Western China, writes that 4,500 calendars giving facts regarding tuberculosis were recently issued in a city-wide campaign in Chengtu, and in addition thousands of pamphlets were distributed to the citizens

Havana to Have a Preventorium.—The authorities at Havana are arranging a preventorium for children threatened with tuberculosis, the first of the kind in the country It is to be installed in a former hotel, the Palacio Campoamor, henceforth to be called the Palacio de la Infancia Desvalida, but is generally known as the Preventorio Marti The *Prensa Medica* states that there were 3,192 deaths from tuberculosis in Cuba during 1915, of which 1 004 were in Havana, a proportion of 28 21 deaths per 10,000 inhabitants The editorial adds that as medical science has eradicated yellow fever, plague and smallpox from the island, tuberculosis will be conquered in time in the same way, and to train the children in hygienic modes of life and prepare them for the combat with the tubercle bacillus is the first great advance in this line

WAR NOTES

Split in American Ambulance—It is reported from Paris, under date of July 16, that the field section of the American Ambulance, Neuilly, has separated from the organization and established itself with separate quarters, separate repair shops, parks, officers and funds unconnected with those of the Neuilly organization

War Relief Appropriation Almost Expended—Of the $3,000,000 appropriated by the War Relief Commission of the Rockefeller Foundation during the six months ended June 30, $2,159,985 has been expended and of this sum $1,290,292 was expended for Belgian relief In Armenia and Syria $360,000 was spent, and in Serbia $148,894 For relief work in and about Constantinople, $35,000, while $55,000 was devoted to the surgical laboratory at Compiegne, France, which is under the direction of Dr Alexis Carrel An appropriation of $1,000,000 for relief work in Poland, Serbia, Montenegro and Albania is yet to be expended

OUR TROOPS ON THE BORDER

Hospital Train for Army—A hospital train of ten Pullman cars, designed by the Army Medical Department, has been ordered from the Pullman shops in Chicago Five of the cars are to be equipped with regular hospital beds and will have large side doors for loading and unloading stretchers Two of the cars will be of the regulation sleeper type equipped with extra fans, medicine cabinets and ice tanks, one will have a completely equipped operating room and another car will be furnished as a kitchen, sufficient to care for more than 200 men In addition to the medical personnel, there will be a special corps of army nurses on the train, which will be painted maroon and will bear the insignia of the Army Medical Department

Want Graduate Nurses for Service on Border—The War Department intends to employ a large number of graduate nurses for service on the Mexican border In accordance with its policy of taking the best of care of the National Guard on the border, the medical department of the army has established a series of base hospitals along the Mexican line, at which these nurses will be stationed It is announced that 276 nurses are needed Their pay will be $40 a month, with an increase of $10 for service outside of the United States, if they should be called on to go south of the border The increase in nurses was authorized under the recently enacted army reorganization bill Maj Douglas McArthur, U S A, the War Department censor, has made public this statement on the subject

> "The Medical Department of the army has established a series of base hospitals along the Mexican border and consequently a large increase has been authorized for the Army Nurse Corps Graduate nurses who desire to make application may obtain full information from the Superintendent, Army Nurse Corps, office of the Surgeon General, War Department, Washington, D C"

LONDON LETTER

London, July 3, 1916

The Combating of Venereal Disease

The first annual meeting of the National Council of Combating Venereal Diseases has been held under the presidency of Sir Thomas Barlow In his address he dwelt on the salient features of the work of the council since its inception in November, 1914 From the beginning the council conceived that the most vital thing it had to tackle was the army, and a great deal of work had been done in that direction A large number of lectures on these diseases and their effects had been given by physicians in London, Liverpool, Leeds and other important centers In fact, over a thousand lectures had been in every case favorably and enthusiastically received The council had had the cordial support of Sir Alfred Keogh, the director-general of the Army Medical Corps and his staff The second subject to which the council had given its attention had been lectures on the social aspect of this wide and many sided question In connection with this work it had received invaluable help from several women physicians and other women There had also been interesting conferences as to the relation of these diseases to national health insurance, and to the desirability of conferring further powers on the civil as well as on the naval and military authorities for dealing with the diseases The council gave its most enthusiastic support to the recommendations of the Royal Commission (given in a previous letter to The Journal)

The State and the Birth Rate

Mr Long, president of the Local Government board, received a deputation representing the National Council of Public Morals, which presented the report of the commission which has inquired into the decline of the birth rate Dean Inge, who presided over the later sitting of the commission, presented the report He said that in considering what recommendations to make they had not forgotten that legislators were obliged to take human nature as it is, and that many reforms which might seem desirable to a moralist would be impracticable or even mischievous if attempts were made to enforce them by law For this reason attention was called to the urgency of certain problems without suggesting how they ought to be dealt with The only quite definite recommendation they made was that the sale of certain drugs widely used for the purpose of abortion should be made illegal They supported the recommendations of the Royal Commission on Venereal Disease, and hoped that measures would be taken to diminish the ravages of these racial poisons At the same time they were convinced that these diseases would probably remain unmanageable until public opinion condemned more effectively the vices through which they were mainly diffused They also drew attention to the effect of housing difficulties in discouraging parenthood, and expressed the opinion that, in adjusting the burdens of taxation, special care was needed not to penalize parenthood among the classes which were capable of prudence and foresight The large and socially valuable middle class especially needed consideration of this kind

Dr Mary Scharlieb said that consideration should be shown to middle class parents of small means permitting them to write off educational expenses, as they already wrote off their life insurance, from income tax returns, or that the state should devise some means whereby all children whose parents needed such relief should at the age of 14 receive a subvention sufficient to procure for them the means of continued education or of making a satisfactory start in life

Principal Garvie said the reckless poor did not limit their families, the prudent, even if well-to-do, not to say rich, were more and more practicing restriction The circumstances and characters of the one class must be so improved that they would not incur the responsibility of parenthood without the ability to meet its demands, and the difficulties and anxieties of the other class must be so relieved that they would be free to accept the blessing of parenthood It would be folly to encourage an increase of numbers without taking steps to secure an improvement of quality in the population

Mr Walter Long, on behalf of the government, thanked the commission for the splendid work it had done The commission had not hesitated to indicate what ought to be some, at any rate, of the directions in which the future policy of the government should be turned, but it was difficult for any government to take what might be described as direct action in connection with all the recommendations With regard to taxation, any proposals in the matter of relief would always receive his cordial support He had long felt himself that the chancellor of the exchequer lost a very useful and proper source of income when he allowed bachelors to pay the same sort of taxation as the married men paid Any proposal which tended to relieve those who spent a portion of their incomes in caring for their children would receive his hearty support Another proposal concerned emigration It was essential, and it had never been more essential than at the present moment, that our great race should extend and grow over the globe We had had in this terrible war a most wonderful illustration of what the British race could do for the flag In Canada there was room for a hundred million people, in Australia there was room for millions, and in South Africa there was magnificent territory from Cape Town almost to the Zambesi We must rear the children who were to be the men and women to occupy these lands in the future. He heartily agreed with the suggestion made that there might be a central emigration board under which the work of migration might be coordinated and properly directed With regard to venereal disease, they had instituted a new scheme as a result partly of the report which had been made on this question They were endeavoring to make arrangements with hospitals throughout the country in order that provision might be made for these unfortunate subjects

PARIS LETTER

PARIS, June 29, 1916

The War

TREATMENT OF WOUNDS OF THE KNEE JOINT

In my previous letters I have spoken of the discussions which have taken place concerning the treatment of wounds of the knee joint Some surgeons have been in favor of immediate arthrotomy while others recommended abstention Dr Pierre Delbet professor of clinical surgery at the Faculte de medecine de Paris has just drawn the attention of the Societe de chirurgie to the fact that in general the reasons invoked in favor of abstention or intervention are insufficient Delbet incubates the pus in a pipet and examines it after twenty-four hours, that is to say, he makes a pyoculture By proceeding in this way one cuts short all the discussion as to early arthrotomy or systematic abstention The indications would be very simple according to Delbet who advises Suppose a recent articular joint wound of small dimensions and containing no foreign body, the articulation distended by an effusion Puncture must be immediately practiced and a smear obtained for microscopic examination this would take from three to five minutes If germs are recognized in the smear, a simple arthrotomy must be immediately made by means of lateral vertical incisions If no microbes are seen one remains expectant, in the meantime immobilizing the articulation In each case the pipet is incubated for twenty-four hours If germs do not develop in the pus, no further action is necessary except possibly that one may suture the arthrotomy wound If the result of the incubation is positive, and especially if it yields a number of streptococci one should make a "wide arthrotomy" by a transverse incision through the patellar ligaments Should there be a foreign body in the articulation, it is preferable to remove it at once Should one suture drain or leave fully open? One must again be guided by the degree of infection If there are no germs visible on the smear, one may suture the wound but still make the pyoculture If the result is negative the suture will be left If it is feebly positive the articulation will be kept under close observation, and one must be ready at any moment to remove the sutures If the positive result is moderate in quantity, one will at once reopen the wound If it is abundantly positive, the simple arthrotomy must be converted into wide arthrotomy

Delbet has had no opportunity of applying these methods to recent knee wounds but he has used them in wounds of this sort dating from several days with the following results Of seventeen cases four proved aseptic and healed without arthrotomy, thirteen were septic. In three of these, only a simple arthrotomy was done the pyoculture having given a feebly positive result The clinical history of these three has been very simple One has healed with ankylosis the other with a knee capable of flexion to 90 degrees, the third is still under treatment There remain ten cases in which the pyoculture was positive and yielded an abundance of dangerous germs, all these had lesions of the bones In all of them treatment was commenced by a wide arthrotomy with immobilization, as rigorous as possible, and extension In one case resection has been practiced because the bony ends were seriously damaged This patient was cured Five patients have been cured with ankylosis, four have required amputation In one of the latter cases the limb would certainly have been saved had the only lesion been that of the knee, but there existed at the same time and on the same side an arthritis of the ankle joint with a crushing of the calcaneum The latter alone had great weight in deciding for amputation Delbet practiced amputation in the three other cases because the number of microbes continually increased and the general condition declined All the patients recovered Delbet thinks that pyoculture guiding him to complete abstention in a certain number of cases and permitting in the others a graduation of intervention, according to the degree of the infection and the resistance of the subjects, has been of essential service

Professor Quenu was of the opinion that it is to the interest of clinical medicine to utilize to the utmost the teachings of the laboratory, and he congratulated Delbet on his efforts to increase the precision of the indications for operation but on one condition and that is that laboratory examinations should not be allowed to delay operations considered urgent Now, the urgency of operative intervention in joint wounds and especially in wounds of the knee, is as great as that of laparotomy in abdominal wounds One can reproach Delbet's pyoculture system with the grave inconvenience of delaying the decision for twenty-four hours Even supposing that one fourth of knee wounds are aseptic, Quenu would prefer personally to run the risks of one useless operation against three chances of a necessary operation, always supposing of course, that the cleaning up of the region, aseptic precautions and the technical skill of the surgeon were irreproachable

IODIN FUMIGATION IN THE TREATMENT OF WOUNDS

At the last meeting of the Reunion medico-chirurgicale de la XVI-e Region Dr L Chemisse of Paris drew attention to the excellent results that can be obtained by the treatment of certain wounds with iodin fumigations The technic is very simple A glass flask has a stopper with two tubes One tube is adapted to a rubber blowing bulb, the other is intended for the escape of the iodized vapors To obtain these, one places in the flask an appropriate quantity of iodin The flask is heated by a spirit lamp, metal gauze being interposed As soon as violet vapors of iodin commence to make their appearance the current of air is forced through the flask by means of the bulb, and the vapors are directed so as to reach the remotest parts of the wound and the operation is continued until the wound is completely dry and covered with a fine, bluish-gray powder with metallic reflections Iodin fumigation must not be combined with wet dressings, the latter would take away all the efficacy of the fumigation The wound immediately after fumigation must simply be covered with aseptic gauze and cotton Iodin fumigations are particularly successful in highly infected, gangrenous wounds covered with adherent false membranes They rapidly cause the wound to clean up The putrid odor of the secretions disappears and the progress of the infective process is arrested In a case of compound fracture of the scapula with fulminating gangrene in the infraspinous and supraspinous fossae which had resisted washing with Labarraque's solution and interstitial injections of hydrogen peroxid, etc, Chemisse saw under the influence of iodin fumigations, that the wound cleaned up completely and the general condition of the wounded man which had been so serious (high temperature extremely feeble pulse) improved very rapidly

Another indication for the use of iodin fumigations is atony of wounds whose condition remains stationary notwithstanding the most varied local applications In one case a sergeant had undergone Chopart's amputation, and the stump, during two long months had shown no sign of cicatrization, and grafts were about to be tried, but a few iodin fumigations sufficed to stimulate the atonic tissues and caused rapid cicatrization

Diminution of Rabies

The health council of the department of the Seine has just received a report on the treatment of rabies in the department during the period 1910-1914 No case of hydrophobia in man has occurred during these five years At the Institut Pasteur there were treated in 1910 119 persons who had been bitten, in 1911 105 1912 111 1913 95, 1914 92 No death occurred The reporter concludes that rabies continues to decrease in the department and that this fortunate circumstance is due above all to the capture of wandering dogs This measure must therefore be more and more developed and applied with perseverance as being the most efficacious

Marriages

Willis Hess Lefevre, M D, Ephrata, Pa, to Miss Marguerite Heiserman of Harrisburg, Pa, in West Philadelphia, July 7

Leigh Fowler Robinson, M D, Raleigh, N C, to Miss Dorothy Beardsley Barrows of Hartford, Conn, July 12

John Howard Baker, M D, Indianola, Okla, to Miss Thelma A Southworth of Walnut Ridge, Ark, May 25

David Paul Whitmore, M D, Rock Springs, Wyo, to Miss Eva Belle Barber of Spring Valley, Minn, June 26

Edward John Gotthelf, Jr, M D, Tucson, Ariz, to Miss Edna Alexandra Pelto of Los Angeles, July 15

Alexander Leslie Marshall, M D, Harrisburg, Pa, to Miss Margaret Blalock of Philadelphia, July 6

David C Trach, M D, to Miss Emma M Frantz, both of *Kresgeville, Pa, at Cherryville, Pa, June 6*

William Robert Perkins, M D, to Miss Ethel Mae Fausett, both of Washington, D C, July 15

William A Seidler, M D, Jamaica, Iowa, to Miss Ethel N Knapp of Colfax, Iowa, June 29

Charles J McGee, M D, to Miss Rose Gertrude Fuller, both of Leavenworth, Kan, July 4

Richard C Sebern, M D, to Miss Edythe Kiner, both of Odebolt, Iowa, April 6

Joseph S Glickman, M D, to Miss Victoria Miller, both of New York, June 20

Deaths

William Simon, M D, Baltimore, aged 72, professor of chemistry in the College of Physicians and Surgeons, Baltimore, since 1880, eminent as a chemist, died at Eaglesmere, Pa, July 19 He was born in Eberstadt, Hesse, Germany, Feb 20, 1844, received his education at Giessen, was given the degree of Ph D by the University of Giessen in 1869 He served as assistant to Prof H Will in Giessen, from 1869 to 1870, and after serving in the Franco-German War, came to the United States and opened a chemical laboratory at Baltimore in 1871 He was professor of chemistry in the Maryland College of Pharmacy from 1872 to 1902, and in the Baltimore College of Dental Surgery since 1888 In 1880 Professor Simon was given the honorary degree of M D by the College of Physicians and Surgeons, Baltimore, and in 1915, the University of Pennsylvania conferred on him the degree of Sc D In 1887 he was elected president of the Maryland Pharmaceutical Association, he was a fellow, member or honorary member of many chemical and pharmaceutical societies

Francis M Harrington, M D, Providence, R I, College of Physicians and Surgeons, Boston, 1891, aged 47, a Fellow of the American Medical Association, formerly secretary of the Pawtucket Medical Association, a member of the Clinical Congress of Surgeons of North America, professor of surgery in his alma mater for many years, and for the last ten years professor of physiology and toxicology in the Rhode Island College of Pharmacy, surgeon-in-chief of the Pawtucket Hospital and consulting surgeon to the North End Hospital and Dispensary, Boston, died at his home, June 6

Carnie Casander Thayer, M D, Clifton Springs, N Y, Rush Medical College, 1878, aged 76, for twenty-one years a member of the medical staff of the Clifton Springs Sanitarium, and during a portion of that time director of the medical staff, for a few years a missionary in Turkey, a member of the United States Sanitary Commission during the Civil War for two years or more, died in the sanatorium, June 24, from gastric and duodenal ulcer

Harris H Baxter, M D, Cleveland, Cleveland Homeopathic Medical College, 1868, aged 69, professor of principles of medicine, the organon and materia medica in the Cleveland-Pulte Medical College, a member of the Medical staff of the Cleveland Homeopathic Hospital, for fourteen years a member of the Ohio State Medical Board and once president of the board, died at his home, July 9, from heart disease

Hilliard James Rowe, M D, Willow Springs, Mo, Missouri Medical College, St Louis, 1886, aged 56, a Fellow of the American Medical Association, formerly president of the Southwest Missouri Medical Society, division surgeon for the Frisco System for twenty-five years and local registrar ever since the vital statistics law went into effect in Missouri, died at his home, June 17, from carcinoma of the rectum

William Abraham Haskell, M D, Alton, Ill, Harvard Medical School, 1869, aged 71, a Fellow of the American Medical Association, one of the most prominent practitioners of western Illinois, a charter member of the Madison County Medical Society, a member of the Illinois State Board of Health and president of the board from 1887 to 1892, died at his home, July 13

Rudolphus D Jennings, M D, Hot Springs, S D, Chicago Homeopathic Medical College, 1889, aged 62, a member of the South Dakota State Medical Association, formerly president of the state board of health and governor and chief surgeon of the Battle Mountain Sanitarium National Home for Disabled Volunteer Soldiers, died at his home, July 12, from diabetes

Charles Edwin Selvage, M D, Newark, N J, College of Physicians and Surgeons in the City of New York, 1906, aged 33, a Fellow of the American Medical Association and a well known orthopedic surgeon, a member of the staff of the Orthopedic Hospital, Manhattan, City Hospital, Newark, and Orange (N J) Hospital, died at his home, July 7, from typhoid fever

Edward Francis Hodges, M D, Indianapolis, Georgetown University, Washington, D C, 1874, Harvard Medical School, 1877, aged 65, a Fellow of the American Medical Association and Royal Microscopical Society of London, professor emeritus of obstetrics in the Indiana University School of Medicine, died at his summer home in Cavendish, Vt, July 11

Charles Wesley Overpeck, M D, Rockville, Ind, Medical College of Indiana, Indianapolis, 1904, aged 37, formerly a member of the Indiana State Medical Association, died at his home, July 10, from the effects of a gunshot wound of the right side, self-inflicted, it is believed, with suicidal intent, while temporarily deranged on account of family troubles

Charles Frederick Braden, M D, El Paso, Texas, Pulte Medical College, Cincinnati, 1890, aged 49, a Fellow of the American Medical Association, secretary of the local Red Cross Society, and secretary of the El Paso County Medical Society, died in a hospital in El Paso, July 6, from gastric ulcer

Samuel Floyd Vaughan, M D, Jonesville, Texas, Tulane University, New Orleans, 1869, aged 72, formerly a Fellow of the American Medical Association, a member of the State Medical Association of Texas, and once president of the Harrison County Medical Society, died at his home, July 7

Robert Wesley Baker, M D, Peoria, Ill, Rush Medical College, 1879, aged 67, a Fellow of the American Medical Association, one of the most prominent practitioners of Peoria, for several years a member of the local board of education, died at his home, July 17, from heart disease

James B Drake, M D, Norwich, N Y, College of Physicians and Surgeons, Baltimore, 1882, aged 63, a member of the Medical Society of the State of New York, visiting physician to the Norwich Hospital and Chenango Valley Home, died suddenly while driving his automobile, July 12

Nathan Allen Loofbourow, M D, Monroe, Wis, Rush Medical College, 1873, aged 67, a Fellow of the American Medical Association, for many years a practitioner and druggist of Monroe, and head of the Loofbourow Hospital, Monroe, died in that institution, July 6

William Alvars Franklin, M D, Chicago, University of Michigan, Homeopathic Medical School, Ann Arbor, 1878, aged 67, formerly professor of pediatrics in Hering Medical College, Chicago, died at his home, July 6, from acute gastritis and pleurisy

Charles Eugene Putnam, M D, Jersey City, N J, New York Homeopathic Medical College, New York, 1883, aged 51, a member of the Medical Society of New Jersey and formerly a member of the Jersey City Board of Health, died at his home, July 13

Francis Marion Spenogle, M D, San Francisco, University of Wooster, Cleveland, 1879, Long Island College Hospital, Brooklyn, 1885, Bellevue Hospital Medical College, 1886, aged 64, died at Buena Vista (Calif) Sanatorium, July 9, from diabetes

Charles Wesley Shill, M D, Lafayette, Ind, Louisville (Ky) Medical College, 1876, aged 65, for two terms coroner of Tippecanoe County, Ind, and county health officer for several years, died at his home, July 8, from cerebral hemorrhage

Thomas Marvin Johnson, M D, Buffalo, University of Buffalo, N Y, 1861, aged 88, for many years a practitioner and pharmacist of Buffalo, died at his home in Bath, N Y, May 6, from arteriosclerosis complicating a fracture of the hip

David William Edgar, M D, Ames, Iowa, Rush Medical College, 1874, aged 69, formerly a member of the Iowa State Medical Association, died suddenly from heart disease, July 10, while driving across the college campus in his automobile

John Y Bennett, M D, Leroy, Ill, Physio-Medical College of Indiana, Indianapolis, 1896, Illinois Medical College Chicago, 1898, aged 43, a Fellow of the American Medical Association, died at his home, about July 9, from pneumonia

Thomas W Reynolds, M D, Charleston, S C, Medical College of the State of South Carolina Charleston, 1904, aged 37, formerly a member of the South Carolina Medical Association, died at his home, about July 2

James Fuller Crane, M D, Richmond Va, Medical College of Virginia, Richmond 1875, aged 66, a Fellow of the American Medical Association, for many years city physician of Richmond, died at his home, about July 11

John Hermann, M D, Sioux City, Iowa, Chicago Homeopathic Medical College, 1889, aged 55, lecturer in the German Lutheran Hospital Training School for Nurses, Sioux City, died at his home, about July 10

George P Eddy, M D, Lewiston, N Y, University of Buffalo, N Y, 1865, aged 75, for more than half a century a well known practitioner on the Niagara frontier, died suddenly at his home, July 4

Elizabeth A Neff, M D, Halliday, N D, Chicago Physio-Medical College, 1896, aged 50, a Fellow of the American Medical Association, died suddenly on the street in Halliday, from heart disease, July 11

Sovereign G Popplewell, M D, Milo, Mo, College of Physicians and Surgeons, Keokuk, Iowa, 1876, aged 69, died at the home of his son in Sheldon, Mo, July 5, from carcinoma of the stomach

Moses H Bonner, M D, Nashville, Tenn, University of Nashville, Tenn, 1879, aged 59, who had been under treatment at Johns Hopkins Hospital for several weeks, died in Philadelphia, July 8

Fred Knight Porter, M D, Southwick, Mass, Medico-Chirurgical College of Philadelphia, 1898 aged 42, formerly a member of the Massachusetts Medical Society, died at his home April 12

Isaiah Charles Barnhart, M D, Brooklyn, Long Island College Hospital, Brooklyn, 1886, aged 68, died at the Huntington (L I) Hospital, July 12, after an operation for appendicitis

Richard W Sipe, M D, Orange, Ind, Indiana Medical College, Indianapolis, 1875, aged 76, a member of the Indiana State Medical Association, died at his home, June 30, from uremia

John Selby Morris, M D, Charleston W Va College of Physicians and Surgeons Baltimore, 1904, aged 38, a Fellow of the American Medical Association, died at his home, May 12

Joseph G Scott, Princeton, Mo (license, Missouri, 1883), aged 79 a practitioner since 1867, died at the home of his son in Princeton, June 24, from cerebral hemorrhage

Robert Hallenus McGehee, M D, Rockcastle, Ala, Vanderbilt University Nashville, Tenn, 1887, aged 52, died suddenly, from heart disease, in Rockcastle, July 3

Charles Sacramento Wood, M D, New York City, College of Physicians and Surgeons in the City of New York 1886, aged 52, died suddenly at his home, July 6

Lafayette Martin, M D, Batesville Ind, Eclectic Medical Institute, Cincinnati 1887, aged 70, died at his home, April 14, from carcinoma of the liver

Horatio C Burritt, M D, Toronto, Ont., McGill University, Montreal, 1863, aged 75, died at his home in Toronto, April 21 from arteriosclerosis

Edward Hale Dickie, M D, Homer City, Pa, University of Wooster, Cleveland, 1884, aged 58 also a druggist, died at his home July 5

Willis S Bryant, M D, Dale, Ind, Miami Medical College, Cincinnati, 1874, aged 67, died, July 6, after an operation for gallstones

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

WINE OF CARDUI SUIT

(Continued from page 307)

May 24, 1916, Afternoon

TESTIMONY OF MR SCOTT DUNNING

The Court met pursuant to adjournment Mr Dunning was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Dunning testified that he resides in Nashville, Tennessee His mother lives in Slayden, and he lived in Slayden up to four months ago He met Dr Heizer in Slayden, Tennessee At that time, the witness was working for a livery stable The witness was with Dr Heizer driving him for one day They started from Slayden, and drove to Mr G T Cooksie's store on Yellow Creek This is a merchandise store Dr Heizer talked with Mr Cooksie's wife Dr Heizer then went to the home of Dr Dixon, a mile and a half away, then back to Cooksie's store The witness stated that Dr Heizer asked him if he knew of any one who drank Wine of Cardui around there The witness stated that he mentioned some women but he did not know whether they drank it or not

Dr Heizer asked him concerning a disreputable place, and the witness told him that the women might drink it, but he did not know Dr Heizer stated that he would get some Cardui and come back to see him The witness does not know if he bought any Cardui or anything else He bought something and put it in the buggy They then went to L J Browning's and Dr Heizer entered, so that the witness did not know what he did They then went to Pea Ridge, the disreputable house

Dr Heizer asked one of the women if she knew of any one who wished to make fifty cents and told her that he would give any one fifty cents to drink Wine of Cardui The witness saw Dr Heizer taking a picture of a Wine of Cardui sign in G T Cooksie's store The women mentioned are women who live in a little old log cabin out in an old field

The witness identified his signature to a document signed by J J Parrot The witness stated that this is the second time he has been in Chicago The first time he came was the latter part of March, at Dr Heizer's request

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that he has seen Mr Richter lately in Nashville Mr Richter came there to see him There was an understanding that the witness was to be paid his expenses and $5 a day for his time The witness stated that he went home about the first of April The witness knows Dr Dixon and Dr McCormick He also knows J J Parrot and he has seen Dr Keaton

The witness stated that he told Dr Heizer that he had seen F T Parrot drink Wine of Cardui The witness stated that he told Dr Heizer about the women of ill repute He had known of their reputation for six or seven years He told Dr Heizer that it was possible that these women used Wine of Cardui

The witness stated that Mr J J Parrot is a drunkard and a farmer He has known him for about six years The witness drove Mr Richter out to see Mr Parrot at the time the affidavit was made The witness does not remember the conversation that occurred between Mr Richter and Parrot It was about Wine of Cardui, but he does not remember what they said The witness saw this statement at the Great Northern Hotel Mr Richter brought it over

Mr Parrot stated in the statement that he had taken two or three bottles of Wine of Cardui and that it did not hurt him, only left a bad taste in the mouth The witness stated that he also signed a statement for Mr Richter, but he does not remember what it was about He does not remember whether it contained what he told Mr Richter The statement was signed over a year ago The witness does not remember that he told Mr Richter to scratch out a portion of the statement before he would sign it

REDIRECT EXAMINATION BY MR FOWLER

Mr Dunning stated that it was several months after he first saw Dr Heizer that he saw Mr Richter He told Mr Richter what had transpired between himself and Dr Heizer

DEPOSITIONS

Some depositions were read and then adjournment was taken until 10 30 a m, May 25, 1916

May 25, 1916, Morning

DEPOSITIONS

The Court met pursuant to adjournment and a number of depositions were read, after which the Court adjourned until 2 p m the same day

May 25, 1916, Afternoon

TESTIMONY OF MR WILLIAM DOWDLE

Mr William D Dowdle was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Dowdle testified that he resides in Millport, Ala, and has a cousin named Dowdle living there who does not drink The cousin is a high church man and the witness never heard him accused of drinking nor did he ever see him drink The witness was asked what kind of a man the other Dowdle is Objection was made to the question The Court ruled that the witness might testify only that the other Dowdle was not seen drinking by this witness and the witness has not heard of his drinking The witness stated that the other Dowdle is his cousin He has been intimately acquainted with him all his life and knows his habits

Mr Dowdle has known of Dr Kay for six or seven years The witness testified that he is a contractor and builder, also an insurance writer He knows of Mr Cox, who ran a store in Millport in 1912 He had not been in business in 1910, but went out of business in 1907 and resumed in 1912

The witness stated that Dr Kay had not seen him drink Wine of Cardui in Cox's store He stated that the conversation which Dr Kay said occurred between himself and the doctor did not occur He stated that he had never drank Wine of Cardui, and that he did not know there was alcohol in it

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that he would not have known anythink about Wine of Cardui from examining it except from reading the label Even if he tasted it he could not have told that there was alcohol in it He stated that Dr Kay lives about 125 miles from where he does The witness has lived in the neighborhood twenty-two years He stated that Cox lived there from 1902 until 1907, moved away and came back in 1912 He knows this because Cox told him He knows about the resumption of business from memory Cox runs a drug store During his absence the store was conducted by Drs Doty, Collins and See The witness does not know whether or not he kept Hostetter's Bitters He knows that he did not keep Wine of Cardui because he can read the cartons He never went around to see whether there was any Cardui there He saw the shelves He could not state any special thing which he saw on the shelves except drugs

The witness stated that he drinks whisky, but he does not drink any tonics He believes he drinks about a gallon a year He orders it from Memphis He does not buy bootleg whisky because it is too cheap He did taste Peruna once ten or twelve years ago

Mr Dowdle testified that Mr Denton first spoke to him about coming to Chicago The witness believes that his expenses are being paid by the Chattanooga Medicine Co, and thinks that the Court is paying his per diem He has no arrangements as to what he is to receive from the Court The Court said perhaps he had better advise the witness to get that idea out of his head

The witness stated that when Mr Denton came to him he asked him whether he (Mr Dowdle) would come to Chicago if the company paid his expenses, he also asked some of the questions which were read to him a while ago The witness also saw a Mr Butler of the Chattanooga Medicine Co Mr Butler asked him if he was ready to go Mr Butler gave him $5 to pay his expenses to Maplesville Mr Glover bought the tickets at Maplesville There were present Mr Glover, Mr Fitts, Mr Dixon, Mrs Adams, and a darky named Ben something He met Mr Richter at the depot in Chicago Mr Richter took charge of him

Mr Dowdle says that he has never tasted or drunk Wine of Cardui

REDIRECT EXAMINATION BY MR FOWLER

The witness stated that his recollection is that Cox came back in November after an absence of five years

TESTIMONY OF MR FRED JAMES (COLORED)

Mr Fred James was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr James testified that he resides in Maplesville, Ala He has worked for Dr Kay six months in all, two months each in 1914, '15 and '16 He was attending to Dr Kay's horses, working in the office, etc He stated that Dr Kay had never seen him take a drink in his life, he never took a drink of Wine of Cardui during the time he worked for Dr Kay

Last January Dr Kay asked him if he ever drank Wine of Cardui, and he told him that he purchased Wine of Cardui for his wife and drank one swallow back in 1910 He stated that Dr Kay had no other business but practicing as a physician He kept no drugs of his own He kept Jamaica ginger Objection was made and sustained to the latter question and answer

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that he is 48 years old, has been married, and has lived in Maplesville eighteen years He sometimes drinks gin and whisky He has not drunk Hostetter's Bitters or Peruna or Manola He orders whisky from Pensacola two quarts at a time

Mr James bought two bottles of Wine of Cardui His wife may have purchased another He was notified to come to Chicago by Dr Glover by telegram He supposed that he had to come to Chicago and that is the reason he came

TESTIMONY OF MRS SUSIE ADAMS

Mrs Susie Adams was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mrs Adams testified that she lives 2½ miles from Maplesville She has been married over three years and had one child two years ago last February Dr Kay and Dr DuBois took care of her She was unconscious from Friday night until Monday morning Her mother told her she had convulsions

The witness stated that she had not taken Wine of Cardui before the baby was born, and she did not tell Dr Kay that she had

Cross-examination was waived

TESTIMONY OF MR B O GLOVER

Mr B O Glover was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Glover testified that he resides in Maplesville, Ala He knows Dr Kay and had known him since he came to Maplesville three years ago His lot and that of Dr Kay's adjoin

The witness stated that the general reputation of Dr Kay for truth and veracity in that vicinity is bad He would not believe him on oath

The witness was asked by the plaintiff's attorney if he knew the general reputation for truth and veracity of the colored man, Fred James, who had testified for the plaintiff a short time previously The Court ruled that this evidence was not in order

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he has been postmaster, has run a saw mill commissary, worked in the store and rented his farm and worked on his farm When he worked in the saw mill commissary he sold Wine of Cardui This he did about three years ago He has also been justice of the peace He stated that Maplesville is a town of about 700 or 800 people

The witness testified that Dr Kay does not pay his debts and that he does not tell the truth He knows that Dr Kay will not pay his debts because he knows people that Dr Kay owes money and will not pay them He knows that execution was issued against Dr Kay in two instances, collection was forced Dr Kay paid in those two instances, and he also paid the Court costs

Mr Glover had an argument with Dr Kay about a road Dr Kay contended that it was a public road, and the witness stated it was not The witness closed it up He heard Dr Kay's reputation generally discussed during the last two years There are about 700 to 800 people in the town The witness named two people whom he heard talk about Dr Kay He stated that the general reputation means that people do not like the man and that he is not popular That is what the witness means by his general reputation for truth and veracity being bad

REDIRECT EXAMINATION BY MR FOWLER

The witness stated—after numerous objections to questions which were sustained—that by unpopular he means that the man does not fulfil his obligations properly and people do not like him

TESTIMONY OF MR R. E FITTS

Mr R E Fitts was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Fitts testified that he lives in Stanton, Ala He farms, builds houses and is an officer of the county He is justice of the peace and has been for about eight years He has known Dr Kay for a little less than three years He knows Dr Kay's reputation for truth and veracity in that community to be bad, and he would not believe him on oath

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he had heard that Dr Kay was elected mayor of Maplesville He named four people whom he heard speak of Dr Kay's reputation Some of them are physicians who are competitors of Dr Kay Two are brothers The witness cannot swear whether the conversations occurred before or since the suit

The witness did not see Mr Richter until he came to Chicago Mr Glover asked him to come to Chicago He did not know what was wanted of him until he came here He testified that he had not the slightest idea that they were wanting to prove by him that Dr Kay's reputation for truth and veracity was not good Mr Fitts stated that he made a statement to a representative of the Chattanooga Medicine Co about a criminal case against Dr Kay some time ago He gave the representative the docket of the case in his court as justice of the peace

TESTIMONY OF B O GLOVER

Mr B O Glover resumed the stand

FURTHER DIRECT EXAMINATION BY MR FOWLER

Mr Glover stated that it is about a year since Dr Kay was mayor of Maplesville He did not know that Dr Kay resigned

DEPOSITIONS

The Court objected to the testimony as to why Dr Kay resigned Some depositions were then read

May 26, 1916, Morning

The Court met pursuant to adjournment Mr Walker, attorney for the Chattanooga Medicine Co, asked that the jury might have the privilege of testing Wine of Cardui organoleptically themselves The Court stated that he could see no objection after the witnesses had been disposed of

TESTIMONY OF DR BENJAMIN H BREAKSTONE

DIRECT EXAMINATION BY MR WALKER

Dr Breakstone testified that he is a physician, a graduate of Rush Medical College in 1899 He passed the state board examination in 1898—while a junior in the medical college He took postgraduate work in diseases of women and in surgery, taught chemistry in the Jenner Medical College in 1898, from 1898 to 1901 was assistant in diseases of women at the Central Free Dispensary, from 1899 to 1902 house physician at the Central Free Dispensary, assistant in surgery, attending surgeon and attending genito-urinary surgeon in the United Hebrew Dispensary for 13 years, assistant to Professor Brauer in nervous diseases at the Central Free Dispensary for four years He also stated that he was attending genito-urinary surgeon at the Illinois Medical College Dispensary, and was assistant professor of gynecology at the Illinois Medical College He was professor of surgery at the Jenner Medical College until 1906, when he became professor of operative surgery at the American College of Medicine and Surgery which later became the Chicago College of Medicine and Surgery, and since 1908 he has been professor of surgery at the Bennet Medical College

The witness also testified that he has been attending surgeon at the Cook County Hospital, consulting surgeon to the Mary Thompson Hospital for women and children, and chief surgeon of the Maimonides Hospital He is now attending surgeon at the Jefferson Park Hospital and the Douglas Hospital, and is consulting surgeon to the Municipal Tuberculosis Sanitarium He is a member of Chicago Medical, Illinois Medical Association, the Chicago Academy of Surgery, the Illinois Surgical Society, the American Medical Association, and the International Hospital Association He stated that he was founder and first president of the West Side Physicians Club, he has been councilor of the Chicago Medical Society and Chairman of the Committee on Abuse of Medical Charities of the Chicago Medical Society One year he was delegate to the Illinois State Medical Society He has written 45 papers which have been published—one item twelve years ago in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION His practice is chiefly among foreign Americans

The witness stated that he has specialized in surgery and diseases of women for the last eight or ten years exclusively He has seen about three hundred patients a year suffering with female diseases, covering all ages, and has performed all kinds of operations which seemed reasonable to him He has very frequently seen gonorrhea in women In his experience 80 to 90 per cent of the women suffer at the time of the establishment of menstruation Medicines are given at this time and frequently he thinks they are useful

Dr Breakstone testified that he studied his surgical work privately under Nicholas Senn, to whom he was assistant for a while He was also a pupil of Christian Fenger, James H Ethridge, and J Clarence Webster He stated that he has seen all the leading gynecologists of the United States and Canada operate and some of the European ones He stated that he is familiar with all the disturbances of menstruation He considers that between 85 and 90 per cent of disturbances of the female organs of generation are nonsurgical, about 10 per cent of the cases that are now referred to him are nonsurgical He testified that in normal healthy women no medicines are indicated, and that pregnancy is not a disease, it is a physiologic affair If there are distressing symptoms the condition is not normal and he gives medicines Tonics are indicated for a run down condition Medicines are frequently indicated at the time of the menopause Medicines are also indicated in practically all female conditions which are nonsurgical, and very frequently inflammatory conditions require nonsurgical treatment He mentioned such conditions

The witness stated that there are cases of sterility which might be treated by nonsurgical methods He stated that he is familiar with the drug known as viburnum prunifolium and uses it in his practice as he believes it has therapeutic value He has never used carduus benedictus He knows of it from reading, in his opinion it may be of benefit as a general and special tonic He considers it possible that the medicine be both a tonic and sedative He distinguishes between a tonic and a stimulant

Q —Doctor, take a medicine known as Wine of Cardui Have you ever used that in your practice? *A* —I have never used any proprietary nor any ready made formula of any kind

Q —At any time in your practice? *A* —At any time

He considered that the alcohol in the hypothetic medicine similar to that described to previous witnesses would have no effect at all It would not have any effect in the dosage given in gonorrhea He considers that gonorrhea is a self limited disease and cleanliness and keeping up the elimination of the body will cure it He would not consider a tonic containing the amount of alcohol mentioned in the hypothetic medicine as detrimental

Q —What amount of alcohol, as alcohol, doctor, in your opinion, can be taken without injury, in a day? *A* —Well, of course, it depends on the patient, and it depends on whether they are used to alcohol, but I would say from two to six ounces is absolutely harmless

Q —Would you make the answer to those that are not used to it, the minimum answer of two ounces? *A* —Yes, sir, as the minimum

Q —Would you expect to have any deleterious results involved with the use of that amount of alcohol? *A* —No, sir

Q —How many drops, doctor, are there in two ounces? *A* —960 drops

Q —Take a young girl who is suffering—

The Witness —I want to qualify that answer I should say 960 minims A drop is not quite the same as a minim

Dr Breakstone does not think that the hypothetic medicine given to a girl during puberty would heighten her passions, nor would it give her an alcoholic habit He stated that a drop of water is approximately a minim, but a drop of alcohol is about half a minim He testified that he did not think the taking of a medicine such as Wine of Cardui in the dosage named would be injurious to the organs of secretion of a woman at this time of pregnancy, nor does he think it would mask or conceal a cancer at the time of the menopause, nor does he think it would mask tuberculosis

The witness stated that alcohol, beer, light wines, etc, are frequently taken by foreign women during pregnancy without bad effect on the mother or the fetus There was described to the witness the experiment of Dr J Clarence Webster, and he stated that in his opinion it did not prove anything as to the efficacy of the medicine when taken by the mouth in the treatment of the sick The fact that pituitrin acted on the uterus would not be evidence, in his opinion, that the previously mentioned medicine would not act on diseased women if taken through the mouth

Mr Walker *Q* —What would be the effect, if any, doctor, upon the tissues, of a local application of a medicine—if there be any—that would kill, itself, the gonococcus? *A* —You mean that the medicine itself would kill gonococcus?

Q —Yes? *A* —Why, any medicine that will kill a microbe will destroy the tissue on which the microbe grows

The Court —Then tell us how it acts Perhaps we have a misconception When you make a local application in a case of gonorrhea, what do you do it for, and what is the chemical action or the physical action of the patient? *A* —Well—

Q —What happens to the microbe? *A* —Well, in acute gonorrhea we do not use any local application at all In the chronic gonorrhea we only use it to help the tissues—

Mr Walker —Louder

The Witness —(Continuing)—to help the tissues throw off not particularly the microbe but its toxins The microbe itself cannot be killed by any medicine unless it will also kill the tissues on which it grows

Q —What figure, doctor, does cleanliness cut in the cure, where there is a gonorrheal infection? *A* —A great figure In fact, years ago we used to use very strong antiseptics in surgery and the healing was not as rapid as it is today when we merely use aseptic precautions, not antiseptic

Q —What is the distinction? *A* —An antiseptic is an agent which is calculated to kill the microbe or its effects An aseptic is to render the tissues devoid of microbes that are already there, so that the tissues could be able to take care of the microbes which might be introduced during the operation or treatment

Dr Breakstone has read the Home Treatment Book for Women He stated that gonorrhea is not brought on by sexual excess, the germ has to be there, it is not caused by discharges from the womb without the germ being present, but such discharges are the cause of vaginitis

The witness stated every case of vaginitis is not due to gonorrhea He testified that leukorrhea is a symptom, and that a tonic medicine would be indicated frequently even when there are malpositions of the uterus He knows of malpositions that have been treated nonsurgically and cured

The witness knows what is meant by synergistic action of drugs

Q —Well, what do you understand by the term? *A* —Well, a synergistic action is an action that is helped by the presence of another drug That is, there are some drugs that have to be given in quite large doses, yet, if we combine it with another drug, it takes a smaller dose of it

Objection was made to questions regarding the witness' opinion of carduus benedictus, as he had never used it in his practice

CROSS-EXAMINATION BY MR T J SCOFIELD

Q —Doctor, in regard to synergistic action, what is it that determines synergistic action? *A* —I don't know

Q —You don't know? *A* —No

Q —All right Then you would not know whether or not in the hypothetical medicine which Mr Hough talked to you about—or Mr Walker talked to you of—whether or not alcohol would aid the carduus benedictus or the viburnum prunifolium in a synergistic way, do you? *A* —I don't believe that the alcohol would aid it in any way, except to keep it in solution and to preserve it

Q —Now, doctor, do you know the difference between adjuvant and synergistic action? *A* —How is that?

Q —Adjuvant and synergistic action, do you know the difference between the two? *A* —Why, an adjuvant is supposed to be a drug that aids the action of another drug, and can be explained on physicochemical lines, whereas, synergistic action is one that we have not yet been able to explain on those lines

Q —Now, do you know whether there is any difference between the two actions, doctor? *A* —How is that?

Q —Do you know whether or not there is a difference between the actions, that is, the adjuvant action and the synergistic? *A* —I presume there is

Q —You have no knowledge upon the subject yourself? *A* —Well, I am not a specialist in that line

Q —What is aseptic, doctor? *A* —Aseptic means the absence of the sepsis, the absence of the germ, or the toxins

Q —Well, aseptic then is a condition, is it not? *A* —Yes, sir

Q —It is not a thing itself? *A* —Well, we speak of an aseptic agent as an agent that will produce asepsis, and the antiseptic, as one that will kill the germs

Q —Now, what is the difference between them, doctor? *A* —Between which?

Q —Between the two terms that you have just used? *A* —Well, an antiseptic agent is an agent that will kill the germs, whereas an aseptic agent is an agent that will render the field free from germs

Q —In what way will it render the field free from germs? *A* —Well, mechanically

Q —How do you mean? Give us an illustration *A* —Well, by scrubbing and using various agents that might dissolve toxins, such as alcohol, and also—generally by giving tonics that will render the system, or render the blood in such shape that they may be able to throw off germs, or dead germs or toxins already there

Q —In using the word "aseptic" in connection with the gonorrhea I understand you to say—or gonorrheal conditions—that the effect will be to destroy the tissues, if you use an antiseptic? *A* —Yes sir

Q —That is, if it were strong enough to kill the germ? *A* —Yes sir

Q —Now, how about iodin, doctor? You have used that many times, haven't you? *A* —I have

Q —Well, do you think that would kill the gonococcus? *A* —Iodin does not kill the gonococcus

Q —Have you ever had any experience in trying it? *A* —Yes, sir

Q —How about nitrate of silver? In 10 per cent solution? *A* —Nitrate of silver does not kill the germ

Q —How about oxychlorid of copper, one in a thousand? *A* —That does not kill it

Q —Did you ever try it? *A* —I have never tried oxychlorid of copper

Q —Then whether it would kill it or not you don't know? *A* —Well, from my readings of experiments that have been made, it will not kill it

Q —How about argyrol in 20 per cent solution? *A* —It will not kill it

Q —Have you tried it? *A* —Yes, sir

Q —How many times? *A* —Many times

Q —How about urotropin, did you try the use of that? *A* —Urotropin will not kill the gonococcus

Q —Did you ever try it?

The Court —See if we cannot put them together and save time There is not anything in your experience that will kill the microbe itself without destroying the tissues?

The Witness —No, sir, there is not

Mr T J Scofield —The trouble with that is there are some things he has not used himself He has mentioned one or two of them

The Court —He does not go outside of his experience He says there is none that he knows of

Mr T J Scofield —Well, I think I have a right to ask him about those—

The Court —You may I was trying to save time

Mr T J Scofield *Q* —In what way do you determine, doctor, whether or not the preparation which you use, or have used, to which reference has been made, kills the gonococcus or not? *A* —Why, after using it, to make a smear and examine it under the microscope to see if the germ is still there

Q —Does that indicate that it has not killed any of the gonococci? *A* —Well—practically speaking it does

Q —What is that? *A* —Practically speaking, it does

Q—How is the gonococci located, and in what way is it held in the vagina for instance? *A*—It is usually within the mucous glands

Q—Yes. Now, is it in the folds of the vagina? *A*—Well the mucous membrane of the vagina is made up of folds

Q—Of folds? *A*—Yes sir

Q—And the gonococci work themselves into the folds, do they not? *A*—Well, they even go deeper than the folds—they go right into the—into the uterus glands

Q—Can you tell the difference doctor, between a gonococcus—when you look at it—one that is living and one that is dead? *A*—Well I can nearly—well, the gonococcus, I don't know whether it is living or dead no

Q—Yes Then how do you know that the agent has not killed the gonococcus? *A*—Well because they still keep on having gonococci and the gonococcus is a short lived microbe, and if you find them a week or two after there must be new ones, so that reproduction must have taken place, showing that the— here must have been remaining living gonococci

Q—Do you ever find any living gonococci in smears? *A*—Well I don't know whether they would be living or dead, but when we find them we say that they are there

Q—Yes? *A*—I am not a bacteriologist

Q—You say whenever you find them, you have found gonococcus, whether it is living or dead, you have found it? *A*—Yes sir

Q—And you cannot tell whether it is living or dead? *A*—Well, you can in this way A living—

Q—I speak of your examination? *A*—Yes A living gonococcus retains its shape, and a dead one undergoes a disintegration very soon

Q—What did you mean a while ago doctor, when you said you could not tell whether a gonococcus was living or dead by such examination? *A*—Well I meant that I am not a bacteriologist

Q—Well you mean you can't tell by looking at it? *A*—Well, you can in the way I have already indicated Perhaps a bacteriologist has some further means of telling but that is the only way I could tell

Q—Now may I inquire whether or not a living gonococcus will grow on a culture medium, any kind of a culture medium? *A*—Whether it will?

Q—Yes sir *A*—I don't think they have been very successful in cultivating it on an artificial medium

Q—Well have they found anything on which it can be propagated? *A*—Well I am not sure about it, but I believe it can be on the serum on human serum

Mr Walker—On what?

The Witness—Serum

Mr Walker—On human serum?

The Witness—Yes

Mr T J Scofield *Q*—But you say you are not sure about that? *A*—No I am not sure about it

Q—And you are not a bacteriologist? *A*—No, sir

Dr Breakstone testified that hygienic methods will cure gonorrhea and that is his method of treating it He stated that alcohol in large quantities is harmful in gonorrhea, but he does not know of any liquid drug that does not contain alcohol If he had a patient who was suffering with gonorrhea he would tell the patient to stop drinking beer as the patient would certainly take more than two ounces of alcohol a day in beer

He stated that beer contains approximately 10 per cent alcohol He does not know that it contains 4 per cent alcohol He stated that he is not an expert on beer He tells all of his patients with gonorrhea to stop drinking beer, whisky, wine and gin, etc

Mr T J Scofield *Q*—Doctor I understood you to say that gonorrhea was a self limiting disease What did you mean by that? *A*—I meant that if left alone and not interfered with by local agents and if the patient is otherwise in normal health it will get well by merely general hygienic and dietetic care

Q—Do you recommend that as a proper way to treat gonorrhea? *A*—I have treated three or four thousand patients that way

Q—And that is your recommendation for gonorrhea? *A*—Absolutely

Q—Did you ever operate on a woman for salpingitis? *A*—Yes sir many

Q—How many times? *A*—Many times

Q—Well approximately? *A*—Well I would say—

Q—Well I don't care it does not matter—but in the percentage of cases—

Mr Walker—He does know He will tell you

Mr T J Scofield—All right.

The Witness—What is the question?

Mr T J Scofield—I was going to ask you about the per cent I will ask you how many cases—then I said it was not material but Mr Walker said you knew? *A*—Well quite a few quite a number

Q—Quite a few All right How many of those cases were gonorrheal salpingitis? *A*—Well almost all cases of double salpingitis is due to gonorrhea

Q—They did not cure themselves did they, doctor? *A*—How is that?

Q—I say those cases of gonorrhea did not cure themselves did they? *A*—No A great many of these never knew they had gonorrhea and a great many of those also were treated locally

Dr Breakstone then stated that the presence of gonorrhea in the urethra might produce urethritis, diseases of the bladder, or of the kidney He described the method of examination of the presence of gonorrhea by a smear and stained specimen He stated that in cases of gonorrheal urethritis, all that is necessary is to keep the urine bland, which he does by giving alkaline solutions, and lots of water, if it is in the womb, he tries to prevent the spread of the inflammation by keeping up the health of the patient

Q—Well, I know—I am not asking you that, doctor My question was, when it is in the womb, how do you keep the womb clean, the inside of the womb? *A*—How do you keep it clean?

Q—I did not ask you how to treat it I asked you how to keep it clean You say cleanliness is the thing that makes it well? *A*—Yes But by cleanliness we don't mean exactly local cleanliness We mean keep the system clean, as well as locally Now if we try to inject anything up into the uterus, we will mechanically push the gonococcus further up, and then we will have salpingitis and the history of almost all the salpingitis that have had treatment are that they had local treatment

Q—You know, doctor, I am not asking you how you don't do it I am asking you how you do keep the uterus clean under those conditions? *A*—Well it will clean itself, by the menstrual blood and—

Q—Then as far as the uterus is concerned, it does not need anything because it will clean itself from the gonococci? *A*—It will clean itself—

Q—Yes? *A*—providing the health of the rest of the body is kept in the highest possible form

Q—Now, then it has not been your experience has it doctor that a man or woman who has strong health, in good normal condition, that the gonococcus germ grows and produces just as rapidly in her case, as it would in anybody else, a person who was anemic, or in poor health? *A*—You mean, does it reproduce as quickly in a healthy person

Q—I mean just what I am saying Doesn't it reproduce itself and spread and increase just as rapidly and as certainly in a strong normal person as it does in anybody else? *A*—Absolutely

Q—It does not? *A*—No, sir

Q—That has been your experience? *A*—Absolutely

Q—Then if a person is in perfect tone and in good condition, they don't need any sort of treatment for gonorrhea? *A*—Well, very many people don't have any sort of treatment for gonorrhea

Q—I am not asking you what many people don't have You are a physician here I am asking you if a person's body is in good tone and they happen to get gonorrhea, if they don't need any treatment at all? *A*—Well I would not say that I would say that anyone afflicted with disease should go and see a doctor, for not only a treatment but advice

Q—Why should they go and see a doctor for treatment and advice? *A*—Well it is a contagious disease they are going to spread it and if they keep on eating all they want and drinking all they want and get their system below par again, why, their resistance will be lowered The idea of treatment is not only cure but also prevention and—

Q—Prevention of what? *A*—Prevention of either the disease gaining a foothold, or its complications

Q—Well but it is a self limiting disease and the person is up to normal tone and it will not spread will it so far as the person is concerned? *A*—Well as long as measures are taken to keep it local, it will not spread Measles is a self limiting disease—

Q—I understand that—

Mr Walker—Let him finish

Mr T J Scofield *Q*—Is there anything else you wanted to say? *A*—Yes

Q—What was it? *A*—Measles is a self limiting disease and many people get no treatment for measles at all yet we have bronchopneumonia following measles in quite a few cases that could be prevented—

Q—I am speaking of— *A*—by treatment

Q—Yes I am talking to you not about contagious diseases I am talking to you about infectious diseases *A*—Every germ disease is contagious and infectious

Q—I am speaking of infectious diseases, doctor *A*—I have just answered that every disease caused by a germ is either contagious or infectious or both

Q—I did not ask you about the contagious end of it we were talking about a condition of infection gonorrheal infection *A*—Well gonorrhea is not an infectious disease it is a contagious one

Q—It spreads how? *A*—By coming in contact with a germ or the germ bearing agent?

Q—But what is it that causes it to spread to the person who touches it or comes in contact with it is it a germ? *A*—A germ exactly

Q—It is a germ? *A*—Yes sir

Q—That is deposited there? *A*—Certainly

Q—Is the disease then as it is developed an infectious condition? *A*—It is called an infection because that particular part is caused by a germ which infects but it is a contagious disease because it is contracted only by contact and an infectious disease is one that we get through the air water or food whereas a contagious disease is one that we get only coming in contact. We are exposed to contagious diseases all the time but if our health is good we are able to ward off that infection—that agent which is going to attack us. Not everyone who is exposed to gonorrhea gets gonorrhea You have to be in—

the tissues have to be in a favorable condition for the gonococcus to be able to attack it

Q —Now, gonorrhea which affects the eye, do you treat that in the same way? *A* —Well, the eye is easily cleaned, and is cleaned mechanically We can cure it by boric acid We cure it by silver nitrate, 1 per cent

Q —What do you use the silver nitrate for, doctor? *A* —Merely as a prevention, to render the field aseptic, render it unfavorable for the gonococcus to be able to attack it, and remain there

Q —Boric acid solution will do that, won't it? *A* —How?

Q —Boric acid solution will do that, will it not? *A* —Why, of course it will

Q —Now, then, doctor, you may describe one examination which you made—

The Court —Just one minute Is gonorrhea that attacks the eye self limiting, as well as in the genito urinary organs?

The Witness —Well, that all depends If it is caught early it is self limiting

Mr Walker —I cannot hear you doctor

The Witness —I say this, if it is not—if you don't catch it early before the—you mean, of course—

The Court —Why do you have to catch it, if it limits itself?

The Witness —You mean in infants?

The Court —Yes, anywhere in the eye

The Witness —It will limit itself only if the health of the patient is as it should be If, however, the health is run down, it will certainly work just like one army attacking another army, if the army attacking is weak, it will take a small army to capture and to eat the other army up And in an infant the sudden change from an intra uterine to an extra uterine life makes them very susceptible subjects to all infections whether it be gonorrhea, or any of the acute exanthemas, or pneumonia, or bronchitis or any of those things

Mr T J Scofield *Q* —Then if I understand you aright, doctor, a perfectly healthy person whose body, tone and condition is absolutely right, can expose themselves to gonorrhea without danger? *A* —I don't mean to say anything of the kind

Q —All right Now, you have told us about the manner in which you determine whether or not gonorrhea is present—whether the condition be a condition of gonorrhea? *A* —Yes, sir

Q —And that is by examination? *A* —Yes, sir

Q —Now then, doctor, you recognize the fact that an examination is necessary? *A* —Absolutely

Q —Well, is it necessary in all cases, doctor? *A* —Yes, sir

Q —In treating women? *A* —Yes, sir

Dr Breakstone stated that examination is necessary to determine the cause of the condition and to direct the treatment, that in the diseases of women the examination of the pelvis is necessary to determine the cause and the treatment, that the treatment can only be determined from the knowledge obtained through examination of what the condition is, that in many of these conditions, the patient can only tell her feelings, symptoms and pain and that these might be referable to many conditions

~~Q~~—Now then, doctor, you would not then think it was a very good thing for anybody to make a suggestion to a woman who was suffering from pelvic conditions that she ought to avoid any examination by a doctor? *A* —Why, I would say that not only the sick people but all the well people ought to go to a doctor occasionally and be examined

Q —For examination? *A* —Yes, sir

Q —That is a preventive measure in the one instance— *A* —Yes, sir

Q —And in the other for the purpose of remedial— *A* —Yes, sir

Q —And anyhow, you think that all women who are sick—or rather, the well women as well as those that are sick, should submit to such an examination? *A* —They should, yes

Q —And you would not think it was a very proper thing for anybody to suggest to a woman under a heading like "Avoid a surgical examination,' and 'it will probably be painful, it will surely shock your modesty even if performed by a woman, if your female organs are out of order, and you suffer from menstrual irregularity, scanty or profuse discharge, womb trouble, or any form of female complaint," taking the hypothetical—or the solution that Mr Walker called your attention—without any examination—as a medicine which is a specific tonic, curative in its action upon all female organs You would not advise that, would you, doctor? *A* —Not as a doctor—I would not

Q —Well, you would not as a man either, would you? *A* —Well, I don't know, men do lots of things, they go to Christian Science churches and all that

Q —Yes But, as a doctor, you would—as a man whose life's study has been to find out — that is, find the condition, to know how to remedy or treat it, you would think then it was your duty, under such circumstances, to examine to know the cause, wouldn't you? *A* —As a physician, I would not attempt to treat any patient without an examination—personal examination

The witness stated that some causes of prolapse are temporary and recover when the tone of the body is built up In order to determine the type of prolapse an examination is necessary He does not take the patient's word for anything

Q —Now, doctor, assume a case of a married woman who has had a number of children, and that she had following her confinements a prolapse of her womb to the extent that it was down near the external opening, also that it was turned wrong side up, and that she could feel it in that abnormal position, assume that this condition existed for approximately two years Have you an opinion, doctor, as to whether taking six bottles of the medicine described to you by Mr Walker, in doses of a tablespoonful three times a day, would turn the misplaced womb back the other way and restore it to its normal position? *A* —Let me ask you, what do you mean by "wrong side up"?

Q —Bottom side up, I suppose *A* —Do you mean an anteflexion?

Q —A complete turning upside down, doctor *A* —Well, I cannot imagine of a womb being completely upside down and the cervix being near the vaginal opening I could imagine a retroflexion that could be that way, but I could not imagine it the other way

Q —Well, can you answer that question as to whether or not that medicine— *A* —Do you mean presuming those things to be true?

Q —Yes, sir, yes, sir *A* —How can I presume anything to be true which is impossible?

Q —I am not going to argue that—what did you say

Mr Walker —He says he could not imagine—

The Witness —I said I could not imagine anything to be true that is impossible

Mr T J Scofield *Q* —I am asking you whether or not it that condition exists If this medicinal solution I have talked to you about would turn it over, put it back in its position? *A* —Well, perhaps if such a thing could be, I presume anything else could be possible

Q —That is the way then in which you answer that question? *A* —Yes, sir

Q —Well, if a woman stated—

The Court —You mean the one is about as likely as the other?

The Witness —Yes, sir

Mr T J Scofield *Q* —Now then, doctor, did you hear me say anything about the cervix of the womb being down near the external opening, in that question? *A* —Yes—

Q —You did? *A* —I think I heard you say near the external opening

Q —Now, listen, doctor, and see whether or not there was anything of the kind said *A* —Perhaps I misunderstood

A —Assume the case of a married woman who has had a number of children, and that she had, following her confinements, a prolapse of her womb to the extent that it was down near the external opening also that it was turned wrong side up, and that she could feel it in this abnormal position, assume this condition existed approximately for two years Have you an opinion, doctor, as to whether or not taking this medicine, or medicinal solution, in doses—three doses a day, until six bottles of it had been taken that it would turn the misplaced womb back the other way and replace it in its normal position? *A* —I could not even imagine anything like that to happen The other day you had some charts here, and I could explain it by them—

Q —I am not asking you about the other day

Mr Walker —He said you had some charts here and he could explain—

The Witness —I cannot see how it could be wrong side up

The Court —Now eliminate that feature of it, and let us have the uterus—say it is nearly to the point of the external opening, have you an opinion as to whether this hypothetical medicine taken in the doses Mr Scofield suggests would restore it to its normal condition?

The Witness —I have an opinion

Mr T J Scofield *Q* —What is that opinion doctor? *A* —That is if the ligaments were not ruptured, and if it was due to the woman being run down, that the medicine, in connection with exercise or local treatment, might cure it

Q —You would not consider, then, that was an operative case? *A* —Well, from the hypothetical question, no

Q —In what way would the medicine cure it?

The Court —You had in mind that the condition had existed for two years?

The Witness —Yes, sir

REDIRECT EXAMINATION BY MR WALKER

Dr Breakstone stated that in his experience a woman had told him that she felt as if her womb was upside down The witness described gonorrheal urethritis He stated that the United States Pharmacopeia and National Formulary contain drugs which are officially standardized He mentioned as drugs which are used in genito-urinary diseases, and which contain as much alcohol as 48 drops to a dose, fluidextract of buchu, spirits of nitrous ether, and fluidextract of juniper When these remedies are prescribed, he considers the alcohol negligible

RECROSS-EXAMINATION BY MR T J SCOFIELD

Dr Breakstone stated that fluidextract of buchu contains about 75 per cent of alcohol, a dose has from one-half dram to two drams He looked up the dose the morning he testified He stated that he has prescribed it three times a day in one dram doses Such a dose would contain 45 drops of alcohol He stated that this medicine is given either for a couple of days or for two or three weeks He stated that medicine should be taken promiscuously

Adjournment was taken until Wednesday, May 31, 1916 at 10 30 p m

May 31, 1916, Morning

The Court met pursuant to adjournment The following depositions were read Dr I M Hyde, Nashville, Dr B F Loring, Nashville, and Dr Tom McMillan

TESTIMONY OF MRS GEORGE R FRANCE

Mrs George R France was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mrs George R France testified that she has been living in Maplesville, Ala, for over two years She knows of no other France in the neighborhood Maplesville is a saw mill town of about 500 people Mrs France stated that she has not moved to New York, but that last November she contemplated going to New York and it was generally known in the neighborhood She did not tell Dr Kay that she was going to New York. She gave birth to a child Nov 14, 1914, and Dr Kay attended her about two months previous to the birth of the child At seven months she had trouble and was sick Dr Kay took care of her When the child was born she had convulsions, beginning on Wednesday night and on Friday she was taken to the hospital in Selma, Ala Dr Kay accompanied her Her baby was born after midnight on Friday night Dr Rogan also took care of her The patient did not take any Cardui during that pregnancy that she knows of She took some about two years before She does not remember whether she told Dr Kay that she had taken it At that time she had an operation for tonsillitis

Cross-examination was waived

TESTIMONY OF MR. P A M'SWAIN

Mr P A McSwain was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr McSwain testified that he lives in Andersonville, S C He knows Dr Ashmore He stated that his wife died five years ago She was ill following the birth of a child During that trouble Dr Hughes of Laurence, S C., attended her Dr Ashmore, of Anderson, S C was his family doctor for about eight years, and performed two operations on Mrs McSwain

The witness stated that he bought all the medicines for his wife He attended her much of the time when she was sick He stated that there never was a bottle of Wine of Cardui in his house, and that he does not know of Mrs McSwain taking any Wine of Cardui

Mr T J Scofield moved that based on the record the testimony be stricken out on the ground that Dr Ashmore testified not that the woman had taken Wine of Cardui, but that she told him she had taken it

The Court ruled that it could stand for what it was worth

The witness stated that he was present most of the time when Dr Ashmore was talking to the witness' wife, and he did not hear her mention anything about Cardui

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that when he was not present he would not, of course, know what was said

TESTIMONY OF MISS SALLIE BURDEN

Miss Sallie Burden was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Miss Sallie Burden testified that she resides in Anderson, S C, where she has lived for about six years She knows some people in the same town called 'Burton"

The witness works in the cotton mills She has never tasted Wine of Cardui She stated that Dr Ashmore treated her two years ago when she and her sister were rooming together Her sister, so far as she knows, has never used any Wine of Cardui She said that she never told Dr Ashmore that she had taken any Wine of Cardui

CROSS-EXAMINATION BY MR. T J SCOFIELD

The witness stated that she does not know what her sister may have told the doctor when she herself was not present.

REDIRECT EXAMINATION BY MR FOWLER

The witness stated that neither she nor her sister had had any menstrual troubles

TESTIMONY OF MR A B BURDEN

Mr A B Burden was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Burden testified that he is the father of Misses Sallie and Jennie Burden He works in the mill He pays for most of the things purchased in his family Dr Ashmore treated the two girls for hookworm The witness has not seen a bottle of Wine of Cardui in his house, and he does not know that the girls have ever taken any Wine of Cardui

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that so far as he knows neither one of his daughters have had amenorrhea, and so far as he knows they have not taken Wine of Cardui

TESTIMONY OF MR W H HANNA

Mr W H Hanna was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Hanna testified that he lives in Anderson County, S C, about 6½ miles from Anderson He was born and raised in that county He is pretty well acquainted with that county and does not know of any man named J M Hanna

The witness has some boys He read their names from a memorandum J T, W S, E M, W H, and O D Hanna He had an uncle, J T Hanna, who has been dead for some three years His father was named C B Hanna

Mr Hanna testified that Dr Ashmore never attended his family, and so far as he knows has not attended his sons

Objection was sustained to the question as to whether the witness had ever drunk Wine of Cardui

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he read the names of his sons from a memorandum, as he wanted to get them right His memory is as good as it ever was

Q—Was it ever good? *A*—Yes, sir I think it was

Q—Of course if you cannot remember the names of your sons you would probably not know what other Hannas might be scattered around through that country, would you? *A*—No, sir I don t know of any

TESTIMONY OF MR. S. L PRINCE

Mr S L Prince was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Prince testified that he is an attorney practicing in Anderson, S C, since 1911 Mr P L Barr was his brother-in-law Mr Barr was thirty-one years old when he died During the summer of 1910 Mr Barr was much in the company of the witness Mr Barr and the witness both belonged to the Rose Hill Club In 1911 the witness took Mr Barr to Dr Carroll's sanitarium in Asheville

Mr Prince stated that he has never seen Mr Barr drunk The witness knows Dr Ashmore. Mr Barr's physicians he stated were Drs Walter Nordin and S W Page He does not know that Dr Ashmore ever treated Mr Barr

Objection was made to questions asking if the witness knew of Mr Barr's taking Wine of Cardui The Court sustained the objection The Court also sustained objection to questions asking whether the witness had ever seen Wine of Cardui in Mr Barr s room

Cross-examination was waived

Further hearing of the case was adjourned until 2 o'clock the same day

May 31, 1916, Afternoon

TESTIMONY OF MRS MAGGIE FREEMAN

Mrs Maggie Freeman was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mrs Maggie Freeman testified that she resides near Landersville Ala She is the mother of two children Dr

Fennell took care of her when the first child was born, at which time she had convulsions The child was born alive and is still living She had not taken Wine of Cardui during that pregnancy and had not told Dr Fennell she had taken any The second child was born nearly a year after the *first one* During this time she took Wine of Cardui She had an easy time with the second child Dr Jackson attended her

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that she took three bottles of Wine of Cardui during her second pregnancy She began to take it about three months after she became pregnant She took it almost through the entire pregnancy—a teaspoonful at a time She would not take it regularly nor as it was directed to be taken

TESTIMONY OF MR CHARLIE FREEMAN

Mr Charlie Freeman was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Freeman testified that he is the husband of Mrs Maggie Freeman, the previous witness At the time her first baby was born Mrs Freeman had convulsions Drs Fennel and Jackson attended her Mrs Freeman had not taken any Wine of Cardui during this pregnancy She was unconscious for three days and was unable to talk Dr Fennel took care of her after the baby was born Mrs Freeman took some Wine of Cardui during her last pregnancy She had an easy time

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that Mrs Freeman took three bottles of Wine of Cardui She would take a *teaspoonful at a time*

REDIRECT EXAMINATION BY MR FOWLER

The witness testified that he bought any medicine used by Mrs Freeman

TESTIMONY OF MISS MOLLIE SIMMONS

Miss Mollie Simmons was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Miss Simmons testified that she resides in Landersville, Ala Dr Fennel treated her about two years ago for brain trouble She had never taken any Wine of Cardui before he treated her, nor did she take any during the time he was treating her, nor did she tell him that she had ever taken any Wine of Cardui Miss Simmons stated that she has never had any female trouble

CROSS-EXAMINATION BY MR T J SCOFIELD

Q —Miss Simmons, you say he treated you for brain trouble What was the trouble? Do you know? *A* —Sir?

Q —What was the trouble for which *Dr Fennel treated you?* *A* —Just from the brains, that is all he ever said what was the—just in my head

Q —Were you down sick in bed? *A* —Yes, sir

Q —Were *you conscious or unconscious?* *A* —Yes, sir

Q —Which were you, conscious? *A* —Yes, sir

Q —All the time? *A* —Pretty well all the *time*

Q —You say pretty well all the time? *A* —Yes, sir

Q —You are entirely clear, I *suppose*, as to what happened while you were sick? *A* —Yes, sir

Q —*You had conversations with* Dr Fennel, did you? *A* —Yes, sir

Q —From time to time? *A* —Yes, sir

Q —How *many* times was he there to see you, do you know? About? *A* —He was there several times

Q —How are are you now, Miss Simmons? *A* —I do not know exactly how old I am

Q —Well, about how old do you think you are? *A* —Well, I don't know exactly We got our ages all tore up, and I don't know exactly how old I am

Miss Simmons stated that Mrs Wilson and Mrs Smaile of the Chattanooga Medicine Co saw her about coming to Chicago and took statements from her She told them that she had taken two bottles of Wine of Cardui They told her that they would pay her

The witness stated that she had taken Wine of Cardui about two years ago—about the time Dr Fennel was there to treat her She took it after Dr Fennel came, not before She testified that she recovered from the sickness for which Dr Fennel treated her She began taking *Wine of Cardui* after she was well and has used two bottles She became acquainted with Wine of Cardui through the Birthday Almanac She would take it a teaspoonful at a time three times a day She stated that she had not had any female trouble

Q —What did you take Wine of Cardui for at that time, after Dr Fennel had cured you, as you say, and you got up—what did you take Wine of Cardui for?

(No response)

Q —Aren't you mistaken about that, Miss Simmons? Wasn't it before you got up—before Dr Simmons was treating you for your brain trouble—or Dr Fennel I mean—that you took that Wine of Cardui? *A* —Yes, sir

Q —It was before he treated you? *A* —Yes, sir

Q —And not afterwards? *A* —No, sir

REDIRECT EXAMINATION BY MR FOWLER

Miss Simmons stated that she took three bottles of Wine of Cardui after Dr Fennel took care of her She was suffering with a pain in the head and with pains at the monthly periods She has taken *headache medicines* since that time She stated that Dr Fennel treated her first and then she took the Wine of Cardui She stated that she is an orphan girl

Miss Simmons testified that she does not know exactly how old she is She does not know whether she is around 40 years of age, and she cannot say whether she is older than 16

TESTIMONY OF MISS REBECCA COOPER

Miss Rebecca Cooper was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Miss Cooper testified that she resides in Landersville, Ala She has not been married She has two children Dr Fennel attended her when the two children were born At the time the first child was born she had *convulsions* She has never taken Wine of Cardui When the second child was born she had no convulsions

Cross-examination was waived

DEPOSITION

The following deposition was read Dr M T Ausbrook, Nashville, Tenn

TESTIMONY OF MR JAMES L M'LEOD

Mr James L McLeod was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr James L McLeod testified that he resides in St John County, Fla, where he is in the timber business He knows Dr Worley He was in the turpentine business with the same company in 1907-8 The camp was in Colee, Fla He was connected with the commissary for about eight years About half his time was devoted to commissary work He did the buying for the commissary through an agent Wine of Cardui was carried in the commissary He stated that they would sell about four dozen bottles of Wine of Cardui a year From *100 to 250 people worked in the* camp Between 40 and 50 were women Most of the people were colored He did not sell any Wine of Cardui, or see it sold to anybody that was drunk. He has never seen anyone about the camp drinking Wine of Cardui The camp is now located about five miles north of Colee, and has been so located about five years

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that there were two people waiting on the customers in the commissary He had entire charge of the commissary in 1911, and for two years following he had a helper or a clerk Before he had entire charge he did not order the goods In case of his absence the helper or clerk prepared the requisitions

The witness cannot say definitely how much Wine of Cardui was ordered in 1906-10 He does not know how much was requisitioned in 1912 He would not say more than four dozen bottles, but he does not know how many He does not know how many he ordered in 1913 The commissary does business with probably 20 or 25 families outside of the camp

REDIRECT EXAMINATION BY MR FOWLER

The witness stated that it has been no trouble to get wine or whisky around the camp if anybody wanted *it*

RECROSS EXAMINATION BY MR T J SCOFIELD

The witness stated that there are no other concerns in that ocality He did not buy any wines or whisky nor did he ell it He has seen it sold in the camp, some of it by mployees He would occasionally see a bottle sold He new where it was to be had and who was selling it He aw the effects of it There was considerable drunkenness in he camp among the colored people and this condition prevailed right along He does not know what they got drunk on For all he knows they may have drunk Wine of Cardui He has seen them drink whisky, beer and wine Most of he wine is domestic It is not a dry country

TESTIMONY OF MR. OGDEN J OLMSTEAD

Mr Ogden J Olmstead was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Olmstead testified that he has been in Florida in the turpentine business for about twelve years At the busiest time he has had 100 men in the camp, and about 40 women, mostly colored He ran the commissary and did the principal ordering himself He was in the camp four fifths of the time He sold perhaps one or two dozen bottles a year He has not seen anyone drink Wine of Cardui He was asked if he had ever heard of anyone drinking Wine of Cardui Objection was made and sustained

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he did the buying, a clerk did the selling He would order Wine of Cardui one case at a time He does not think he ever ordered more than one case He has no distinct recollection of how much he sold in any one year

REDIRECT EXAMINATION BY MR FOWLER

Mr Olmstead testified that Wine of Cardui was put up a dozen bottles in a box

TESTIMONY OF MR A M BENNETT

Mr A M Bennett was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Bennett testified that he is a turpentine proprietor with a camp at Neoga, Fla He has about 50 people at the camp, 12 or 15 of them women He has never handled Wine of Cardui, to the best of his recollection, and has never seen any one drink it

The witness knows Mr A V Huff He did not know him personally as he was a kind of a hard man to know Mr Huff was drunk all the time So far as the witness knows Mr Huff did not drink any Wine of Cardui in his camp There were stores two miles away at Espanola

CROSS-EXAMINATION BY MR. T J SCOFIELD

The witness stated that he does not know anything about what occurred in the camp at Espanola The camp was abandoned about two years ago

REDIRECT EXAMINATION BY MR FOWLER

The witness gave the name of the man who conducted the camp at Espanola He did not know how much they carried

Mr Scofield asked that the whole testimony be stricken out as it was not in rebuttal to the testimony of Dr Worley The Court ruled that the man's testimony that he had not sold any Wine of Cardui in his camp might stand

TESTIMONY OF MR. ED W BURNSED

Mr Ed W Burnsed was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Burnsed testified that he has been living in Espanola, Fla, for fifteen years He conducts a general store There was formerly a camp at Espanola conducted by a man named Mattox, who left there about three years ago His people traded with Bohanan and Sons, who went out of business The witness stated that he does not sell Wine of Cardui and never has

Mr Burnsed stated that Mr A V Huff formerly ran the camp before Mr Mattox There was formerly a camp about a mile from Espanola, in which there was a store conducted by Mr Hoover The witness does not know that Mr Hoover carried any Wine of Cardui He did not see any sold for drinking purposes He does not know that anyone drank Wine of Cardui

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he knows Dr Worley and Mr Sabbity They lived in St Augustine, about 40 miles from Espanola The witness knows every man who has lived in that neighborhood for the last 15 years The witness has never sold any Wine of Cardui He does not know whether any one carried Wine of Cardui prior to two years ago

TESTIMONY OF MR C C BROOKS

Mr C C Brooks was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr C C Brooks testified that he resides in Covington, Ga He knows Dr Everett, who lives about five miles from Covington He knew Will McWhorter, who died in October, 1915 He knew John Neely, who died Nov 27, 1913 He knew Henry Harper, who died September, 1912

Cross-examination was waived

DEPOSITIONS

Two depositions were read and court adjourned until the following day, Thursday, June 1 1916, at 10 30 o'clock a m

June 1, 1916, Morning

TESTIMONY OF MR EVERETT R OGILVIE

The Court met pursuant to adjournment Mr Everett R Ogilvie was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Everett R Ogilvie testified that he resides in Jacksonville, Fla He was formerly engaged in the turpentine business at Durbin Station, in St Johns County He was also postmaster He was in this business from 1905 until 1913, and employed from 65 to 100 men in his camp, and there were usually from 15 to 25 women There was a commissary which he conducted with the assistance of a clerk He did not keep posted as to the stock of goods on hand Wine of Cardui was kept in stock He bought it direct from the Chattanooga Medicine Co During the time he ran the business he thinks he purchased about four dozen bottles This purchase was made about three years before he went out of business Practically all of the stock was on hand at the time he went out of business He does not remember that he sold a bottle, nor does he know of anyone drinking Wine of Cardui in the camp He was also connected with other camps, and so far as he knows Wine of Cardui was not drunk as a beverage in those camps

CROSS-EXAMINATION BY MR T J SCOFIELD

Mr Ogilvie stated that most of the help in his camp were colored The clerk waited on the customers most of the time He is not positive how many orders he gave for Wine of Cardui If he was out of any particular line he would purchase more

REDIRECT EXAMINATION BY MR FOWLER

The witness stated that he did not run out of Wine of Cardui

RECROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that some of the time the clerk would order goods He knew when it was necessary to order goods from what the clerk told him

TESTIMONY OF MR TOM HART

Mr Tom Hart was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Tom Hart testified that he lives below Dothan Ala He knows of Frank Sellers, Joe Granger, and Jim Sellers, who ran a store at Cottonwood He stated that he never purchased any Wine of Cardui in Seller's store, nor did he drink any there, nor did he see anybody else drink any Wine of Cardui there He testified that he has never drunk Wine of Cardui He had a brother named Pat Hart who died last February, and does not think that Pat Hart ever drank Wine of Cardui

The witness stated that he was never arrested for being drunk on Wine of Cardui He does not know of Pat Hart or anyone else being arrested because they were drunk on Wine of Cardui

Mr Scofield moved to strike out the last evidence as there is no testimony that the witness was arrested The Court stated that this could be verified from the record

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that he sometimes drinks, but that he never was drunk in his life He drinks whisky and beer He can order two quarts of whisky at a time from Florida He never bought any in the drug stores or of the bootleggers Mr Tom Ashby saw him about coming to Chicago Mr Ashby told him of the testimony that had been given in the trial After he came to Chicago he did not talk with anyone about what he would say at the trial

Mr Hart had one drink on the morning of testifying—namely, "gin" He did not mention gin previously as he considers it is whisky

TESTIMONY OF MR GENE HUNT

Mr Gene Hunt was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Gene Hunt testified that he lives in Dothan, Ala He knew J H Sellers who ran the store at Cottonwood, but did not know Frank Sellers He stated that he has never drank Wine of Cardui, and that he has never bought any of it at Seller's store He testified that he never tasted Wine of Cardui, and that he never saw anyone drinking it as a beverage He never was in Sellers' store at a time when Tom and Pat Hart were there

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he quit drinking about ten years ago He knows Tom and Pat Hart, but is not intimate with them He does not pretend to know what Tom or Pat Hart did He simply speaks for himself

TESTIMONY OF MR WILLIAM RUCKER

Mr William Rucker was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Rucker testified that he lives about three miles from Cottonwood He has known Mr J H Sellers and Mr Frank Sellers for about ten years Frank Sellers never saw him drink Wine of Cardui He stated that he never did drink Wine of Cardui He tasted the first bottle which he bought for his wife back in 1899 His wife had irregular periods He bought her one bottle and after she took it he took $5 and bought her six bottles She took all of that—a tablespoonful three times a day She had taken doctor's medicine up to that time and it did not do her any good Since that time she goes to the field and plows the same as he does

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he is not a drinking man When he was a boy he used to take a drink every morning He stated that he did not take a drink of the Wine of Cardui, he put his tongue to the stopper Since 1899 he has had no experience with Wine of Cardui, except as he gave it to his wife

REDIRECT EXAMINATION BY MR FOWLER

The witness stated that he tasted the Wine of Cardui about 15 years ago

TESTIMONY OF MR JOE HANLEY

Mr Joe Hanley was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Joe Hanley testified that he lives within nine miles of Athens, Texas He has known Dr J K Webster about 13 years Mr Hanley is a farmer He stated that he never drank Wine of Cardui behind the drug store with two other persons He once tasted Wine of Cardui in Athens in April, 1916 Tom Russel was with him on that day Tom Russel works for Dr Webster

Q—Did you know what it was you tasted when you tasted it at that time? *A*—No, sir, I did not, he said he had something good to drink, and I took a little swallow of it, and I told him if they called that good, I did not know what he called bad

Q—When did you find out what you had drank? *A*—I went back to the druggist and asked him—he asked me had I bought a bottle He left the wrapper in this here drug store where we have been talking about, and he asked me had I bought any bottle that day, and I told him no sir, I had not, and he says that somebody had, and I says I know who got it, Tom Russel done it, and he says "Do you know it?" and I says, "I don't know what it is, but I will go back"—

Mr T J Scofield—That is objected to What has this conversation got to do with it?

Mr Fowler *Q*—Had you ever tasted it, put your tongue to it before that day? *A*—No, sir

Q—Have you ever since that time? *A*—No, sir, I have not

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he has been drinking off and on for about twenty-five years Athens is a dry country, it has been dry ten or twelve years He drinks mostly whisky, he also has drunk a few bottles of Hostetter's Bitters and a few bottles of Manola He has never tried Peruna He may have drunk something behind the store, it was either whisky or Hostetter's Bitters He has never drunk Wine of Cardui He gets his bitters from the druggist, who carries a pretty good line of tonics

The witness testified that Mr Reynolds of Dallas, Texas, arranged for him to come to Chicago Mr Reynolds is the representative of the Chattanooga Medicine Co for the state of Texas Mr Reynolds came to see him on April 15, took his evidence and made arrangements for him to come in case he should have to The witness told Mr Reynolds that he would come for $3 a day, and payment of his expenses

The next man who came to see him was Mr George, of Athens, who works in a drug store The witness does not know whether or not they sell Wine of Cardui Mr George bought his ticket and Mr Reynolds came with him Since he came to Chicago he has talked with Mr Reynolds and Mr Richter about his evidence He has not talked with any of the attorneys No one told him what they wanted him to testify about They did not know what he was going to say until they heard him testify on the witness stand He told them that he intended to tell the truth, and it would make no difference who it would hurt He also told them that he was going to swear that he never got drunk on Wine of Cardui He has been drunk at times

REDIRECT EXAMINATION BY MR FOWLER

The witness stated that he gave Mr Reynolds a written statement as to what he would testify when Mr Reynolds first came to see him The gentleman to whom he referred was Mr Wheatley

TESTIMONY OF MR MARCUS G NOELL

Mr Marcus G Noell was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Noell testified that he resides in Waco, Texas He knows Dr G M Goddard Mr Noell is vice president of the McKnight Sundries Co, Waco, Texas He has been engaged in this business about six years He lived in Boyce for nearly two years Dr Goddard was practicing medicine in Boyce, and his office was next to the drug store owned by the witness Boyce is a town of about 100 population The witness furnished Dr Goddard with his office and the drugs that he used in his medicine case He considers Dr Goddard's general reputation for truth and veracity as bad and he would not believe him on oath

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that he is twenty-nine years old He lived in Boyce in 1908 and 1909 He has not been in Boyce for seven years All he knows about Boyce he learned in the twenty months when he had a drug store there He has heard Cary Wilson speak of the reputation of Dr Goddard, in Boyce Mr Wilson is the only one whom he could remember having heard speak about Dr Goddard When he conducted the drug store he sold Wine of Cardui He does not sell Wine of Cardui now Before he lived in Boyce he worked for his brother in a drug store, in which Wine of Cardui was sold

Mr Noel is acquainted with Mr Reynolds, state agent for the Chattanooga Medicine Co in Texas Mr Jackson of the Chattanooga Medicine Co arranged for the witness to come to Chicago Mr Jackson told the witness that he wanted him to impeach Dr Goddard The witness could not say what Cary Wilson said

TESTIMONY OF MR J W PEARSON

Mr J W Pearson was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr J W Pearson testified that he lives at Leonard, Texas He is Dean of the Faculty of the Cumberland College, which is connected with the Cumberland Presbyterian Church He was ordained as a minister in 1882 He knew Dr G M Goddard, in Boyce He was in Boyce in 1905, 1906 and part of 1907, and engaged in the drug business The witness stated that Dr Goddard's office was inside of a building which the witness had rented He considers Dr Goddard's reputation for truth and veracity as bad and he would not believe him on oath

CROSS-EXAMINATION BY MR. T J SCOFIELD

The witness stated that he has spent sixteen years of his life in the drug business He sold Wine of Cardui, Lydia Pinkham's Compound, but not Manola or Hostetter's Bitters He was a minister while he was selling Wine of Cardui He did not charge Dr Goddard any rent for the office in his building He put up the prescriptions for Dr Goddard The witness has been dean of the college since 1910 The college has from 75 to 100 pupils a year There are four teachers on the faculty, including himself

The witness testified that he had no trouble with Dr Goddard, although they conflicted a little sometimes in their views about things in the drug store The witness has heard Lum Wilson Cary Wilson, George Ledwell, J M Burford, John Borders and Grandfather Borders, Dr Graham, Bert Smith Elmer Smith and Mr Dahnke talk about Dr Goddard They stated that Dr Goddard was a regular windy, and a braggart, and they would not rely on what he said One of them said he was a rascal The witness says he does not take stock in those things He trys to say good about every man in the world if he can Cary Wilson said that Dr Goddard was windy, and Lum Wilson said Dr Goddard was a braggart He does not remember who said Dr Goddard was a rascal because he does not want to remember that. He didn't want to believe it and tried to forget it

REDIRECT EXAMINATION BY MR FOWLER

It was brought out that the reason the witness considered Dr Goddard a rascal was that the witness furnished the medicine for Dr Goddard's emergency cases, and that the doctor took too much medicine for his emergency cases The witness considered that Dr Goddard did not give him enough prescriptions to pay for the medicines which he used in the emergency cases

RECROSS-EXAMINATION BY MR. T J SCOFIELD

The witness stated that it is the custom among druggists to give physicians free the medicines which the doctors carry in their little hand case for emergency and the druggist takes his chance of being repaid by the prescriptions which come in.

TESTIMONY OF MR. C A. GARDINER

Mr C A. Gardiner was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr C A Gardiner testified that he is in the real estate and loan business in Dallas Texas Dr Goddard had a sanatorium in Oak Cliff for the cure of drug habits He considers the reputation of Dr Goddard for truth and veracity as bad, and he would not believe him on oath

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness has lived in Dallas twenty-five years He was formerly on the road selling harness For about nine years he has been in the loan and real estate business The sanatorium was about two blocks from the witness' house The witness was interested in real estate in the neighborhood of the sanatorium He was not intimate with Dr Goddard, but knew him when he saw him He has never had business relations with Dr Goddard Oak Cliff is a town of 20,000 people All he knows about the Goddards is what he has heard people say of them He heard it said that they were a bunch of crooks Dr Ed Means, George Fryson and Mr Britton manager of the Fulton Market in Dallas, are the ones he heard say this

The witness is a friend of Mr Reynolds, agent for the Chattanooga Medicine Co in the state of Texas Mr Reynolds came to see him and took a statement from him

TESTIMONY OF MR BEN W SMITH

Mr Ben W Smith was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Ben W Smith testified that he is in the manufacturing business, a manufacturing pharmacist, residing at Oak Cliff He has been in the drug business for nineteen years He considers the reputation of Dr Goddard for truth and veracity as bad and would not believe him on oath

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he ran a drug store in Sulphur Springs He has sold Wine of Cardui He manufactures a patent medicine called "Eucaline," also Hall's Chill Tonic and sarsaparilla, a tonic and a liniment Hall's Chill Tonic has no alcohol in it Eucaline has two forms one with 1 per cent and another with 3 per cent The tonic sarsaparilla has 10 per cent of alcohol Oak Cliff is in a dry territory

The witness stated that he was reasonably acquainted with Dr G M Goddard Mr Reynolds of the Chattanooga Medicine Co lives six or seven blocks from Mr Smith, and the witness is well acquainted with him The witness signed a statement for Mr Reynolds Mr Reynolds did not agree to recompense the witness He did agree to pay his expenses

Mr Smith had an uncle who stated that Dr Goddard's reputation for truth and veracity was bad His uncle's name was E G Patten, who died six or eight months ago He was no relation to the Pattens of the Chattanooga Medicine Company

The witness has had business relations with the Pattens for fifteen or sixteen years He stated that he also heard W T Dansby talk about Dr G M Goddard Mr Dansby has moved to South Texas, but the witness does not know just where

Adjournment was taken until 2 o'clock the same day, June 1, 1916

June 1, 1916, Afternoon

TESTIMONY OF MR W H CARSON

Court met pursuant to adjournment Mr W H Carson was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Carson testified that he is a traveling salesman for the Columbia Conserve Co, of Indianapolis, Ind He has lived in Dallas, Texas, for about twenty-eight years He considers the general reputation of Dr G M Goddard for truth and veracity as bad, and he would not believe him on oath

CROSS-EXAMINATION BY MR. T J SCOFIELD

The witness knew Dr G M Goddard personally at the time when he (Mr Carson) was a grocery clerk The witness was well acquainted with Dr Goddard's brother He stated that on April 3 he received a telegram at Decatur Ill asking him to meet Mr Richter of the Chattanooga Medicine Co Mr Richter asked him if he would come to Chicago to testify about Dr Goddard He told Mr Richter he would not Later Mr Richter saw him in the Fort Dearborn Hotel and he asked him to come and testify

TESTIMONY OF DR CLAUDE L MURPHREE

Dr Claude L Murphree was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Dr Claude L Murphree testified that he lives in Gadsden, Ala He is a graduate of the Birmingham Medical College and is a member of his county and state society He takes The Journal of the American Medical Association He knows Dr H L Appleton and considers his reputation for truth and veracity as bad, and would not believe him on oath

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he is a reasonably good friend of Dr Appleton An attorney named W J Boycan asked him to come to Chicago to testify Dr Boozer and Dr Johnson also came Mr Richter of the Chattanooga Medicine Co also saw him about coming to Chicago He stated that he came up for expenses and per diem The per diem was $40 per day and expenses for every day that he is away from home He stated that Dr Appleton has called him in consultation He named the following persons who said they would not believe Dr Appleton on oath Carl Whorton, E T Schueler, Dallas Payne and Charley Bell All of them live in Gadsden, which is a town of about 12,000 people Most of the talk followed some litigation in which the people mentioned were interested

TESTIMONY OF DR W B JOHNSON

Dr W B Johnson was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Dr Johnson testified that he lives in Gadsden, Ala He is a member of his county and state society He considers Dr Appleton's general reputation for truth and veracity as bad, and would not believe him on oath

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that he began to practice medicine at Munford, Ala From there he went to Ashford, Ala, and from there he went to New York City, where he took a postgraduate course for one year, and then returned to Gadsden He has never had any business relations or consultations with Dr Appleton He heard Mr O J Stock and Mr Carl Whorton speak of Dr Appleton He does not know what the litigation was that Dr Murphree spoke about Mr Boycan spoke to him about coming to Chicago He is to receive $40 a day, with his expenses for the time that he is absent from home

TESTIMONY OF DR D T BOOZER

Dr D T Boozer was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Dr D T Boozer testified that he resides in Gadsden, Ala He considers Dr Goddard's reputation for truth and veracity as bad, and from his reputation would not believe him on oath

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he was licensed in 1914 He was practicing with his brother before he finished school At that time he did not know that this was in violation of the law

Dr Boozer has known Dr Appleton about one year Mr Boycan saw the witness about coming to Chicago He is to receive $40 per day, with expenses, for the time that he is absent from Gadsden There are seventeen doctors left in Gadsden during the absence of the three who are here to testify

The witness has heard Mr Carl Whorton, Mr H B Myers, and Mr Lokey, a druggist, who sells Wine of Cardui, talk about Dr Appleton He also heard Mr Stock talk about Dr Appleton He heard Mr Stock speak of Dr Appleton when he first came to Gadsden Dr Boozer rented his office from Mr Stock and Mr Stock told him that Dr Appleton was not reliable, very uncertain, and he would not have very much to do with him Dr Johnson and Dr Murphree are also located in Stock's building, but Dr Appleton is not Mr Stock stated he did not care about renting Dr Appleton office space

REDIRECT EXAMINATION BY MR FOWLER

The witness stated that he bases his opinion on the statement of the four men whom he mentioned and on the opinion of other people whom he could not remember

RECROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he understands what it is to swear that a man's general reputation for truth and veracity is bad, and from what he heard said by other people he would doubt Dr Appleton's word

DEPOSITIONS

Several depositions were then read after which court adjourned until Friday, June 2, 1916, at 10 o'clock

June 2, 1916, Morning

TESTIMONY OF MRS LIZZIE GATES

Mrs Lizzie Gates was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mrs Lizzie Gates testified that she resides in Frankfort, Ala She knows Dr William Henry Greer who attended her a year ago She married her second husband seven years ago Her health was then good, and remained that way for four or five years, when she developed ovarian trouble She took one bottle of Wine of Cardui and believes it did her good After that she was treated by four physicians and had an operation for ovarian cyst, which was performed by Dr Prince She took no Wine of Cardui, but some whisky on recommendation of Dr Farnham, who told her it would be a stimulant for her nerves She took about a pint over a period of two or three months She then went to see Dr Greer at Tuscumbia She had taken about a bottle of Wine of Cardui from the time the four physicians treated her until the time she saw Dr Greer This was before the operation Mrs Gates stated that she had never told Dr Greer that she had taken Cardui and whisky together She did not tell him she wanted to get off the habit, as she had no habit

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that she probably had ovarian trouble ten or twelve years before she was operated on She went to see Dr Greer after the operation because of nervousness Dr Greer did not examine her She told him about the operation and the treatment which had been given her by different doctors She also told him what she had been taking She took the medicine which Dr Greer gave her and became better She is not well yet

TESTIMONY OF MR W H GATES

Mr W H Gates was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Gates is the husband of Mrs Gates, the previous witness He stated that his wife became sick about two years after they were married She took one or two bottles of Wine of Cardui He does not know exactly which He did not hear the conversation between Mrs Gates and Dr Greer, and was not present when Dr Greer examined her

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he does not know how much Wine of Cardui Mrs Gates took before her operation He doesn't know exactly how long it was after the operation that he took her to Dr Greer—probably six or seven months She was using whisky during that time She is better now than before she went to see Dr Greer

TESTIMONY OF MR STEPHEN JACKSON MONTGOMERY

Mr Stephen Jackson Montgomery was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Montgomery testified that he lives in Franklin County, and he has known Dr Fennell for seventeen or eighteen years

He has never drunk any Wine of Cardui, and Dr Fennell never saw him drink any of it with a man named Lipscomb or anybody else

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he drinks beer and whisky sometimes He has never drunk tonics He drank some Jamaica Ginger, and some bitters called 'Morning, Noon and Night" with a picture of an owl on the bottle He has never drunk any Hostetter's Bitters He believes that even when he is drunk he knows what he is drinking He says he drinks pretty often—when he can get it He does not know if Dr Fennell ever saw him drink He has no recollection of it

TESTIMONY OF MRS MARY SEIBERT

Mrs Mary Seibert was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mrs Mary Seibert testified that she resides in Summerdale, Ala She became acquainted with Dr Krohn, of Chicago, in 1912, at the Planter's Inn when she was housekeeper there She met him in August and he left Summerdale in November The inn was owned by a company and the proprietor was called "Highball" Morgan

In a cottage just west of the hotel Mrs Clemmons lived The people used to help Mrs Clemmons out Among those who helped her were Mrs Fancher and Mrs Barnes Dr Krohn went to see Mrs Clemmons twice in the latter part of October

There was another hotel in the town known as the Ravone which was owned by a man named Schmidt There was also a boarding house known as McCurdy's boarding house conducted by Mrs Beasley McCurdy had a reputation for killing dogs He was a sheep raiser Dr Krohn was called to McCurdy's boarding house to see Mrs Beasley's daughter in the latter part of October The witness stated that Mrs Clemmons had five children The girl who was ten years old worked for her in the hotel

CROSS EXAMINATION BY MR T J SCOFIELD

The witness stated that she knew Dr Krohn did not see Mrs Clemmons but twice because Mrs Clemmons told her so

The Court ruled that all evidence relating to his having seen Mrs Clemmons but twice should be stricken out.

The witness testified that Dr Krohn went to McCurdy s boarding house only twice She knows this because she remembers the number of times they came after him

Mrs Seibert testified that Mr Richter saw her about coming to Chicago Mr Richter agreed to pay her expenses and $5 per day Mr Richter told her that Dr Krohn had said up here that Mrs Clemmons had been drinking Wine of Cardui Mr Richter told her that instead she had been drinking laudanum Mr Richter did not tell her how much laudanum Mrs Clemmons drank

The witness stated that she made a memorandum in her mind of the visits made by Dr Krohn He did not visit anywhere except at the two places mentioned He went to the stores and the postoffice She does not know how many times he went to the postoffice She was not out in the front part of the house all the time Dr Krohn might have been called out at times when she was in the kitchen

REDIRECT EXAMINATION BY MR FOWLER

Mr Fowler asked the witness what Dr Krohn was doing in Summerdale

The Court ruled the question be stricken out on the ground that Dr Krohn himself had stated on the stand that he was not down there practicing medicine but on business

TESTIMONY OF MRS EMMA CLEMMONS

Mrs Emma Clemmons was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mrs Clemmons testified that she lived in Summerdale Ala , from April to December 1912, near the Planter s Inn She was sick most of the time she lived there Dr Krohn came to see her once with Dr Armistead, and once afterward She had taken about a teaspoonful of laudanum, which she had been taking for two years She stated that she had never taken a dose of Wine of Cardui in her life and had never tasted it She stated further that she never told Dr Krohn that she had ever taken Wine of Cardui Her husband sent for Dr Krohn at 11 o'clock at night She was conscious when Dr Krohn arrived Dr Krohn did not pump out her stomach There was no rubber tube in the house Dr Krohn gave her husband some tablets and told Mr Clemmons to give her one every two hours, until the pains were eased

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that she had taken a teaspoonful of laudanum at a dose on the day Dr Krohn called She was delirious when he arrived She has stopped taking laudanum for over a year She does not take anything in the place of it She bought the laudanum from Mr Cherry and some from Mr Baldwin She used to take laudanum in teaspoonful doses three times a day

REDIRECT EXAMINATION BY MR FOWLER

The witness stated she did not know what delirious means She knew what was going on

RECROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that she sent for Dr Krohn because she was in misery She had not taken any laudanum that day She took some in the morning at 7 o'clock but not at night

TESTIMONY OF MR R N M'CURDY

Mr R N McCurdy was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr McCurdy testified that he opened a boarding house in Summerdale in 1911 He raised sheep Every time a dog died there was talk that somebody had poisoned it and it was generally laid on the sheep man He ran the boarding house about five months, it was then conducted by Mrs Beasley He does not know Dr Krohn, and, so far as he knows, he has never seen him

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he is to receive his expenses and $5 a day for coming to Chicago

TESTIMONY OF MRS C C BEASLEY

Mrs C C Beasley was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mrs Beasley testified that she lived in Summerdale, Ala , in 1912 and conducted McCurdy's boarding house She met Dr Krohn one night when her daughter was sick Dr Krohn called and stayed for an hour The daughter had a high temperature and was delirious It was said that she had pellagra She told Dr Krohn all she knew about her daughter Nothing was said about Wine of Cardui Her daughter had never taken a dose of Wine of Cardui Dr Krohn only came to see the daughter once

RECROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that the above incident occurred in 1912

TESTIMONY OF MR WILLIAM P BALDWIN

Mr William P Baldwin was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Baldwin testified that he had conducted a store in Summerdale in 1912 and carried laudanum He also carried Wine of Cardui He did not sell Mrs Clemmons any Wine of Cardui He did sell her laudanum He knows Dr Krohn Dr Krohn was in Summerdale in 1912

CROSS-EXAMINATION BY MR. T J SCOFIELD

The witness testified that in the State of Alabama, in 1912 it was not against the law to sell laudanum It is now He has no license to sell laudanum at the present time He still sells Wine of Cardui He did not sell Mrs Clemmons laudanum every time she came for it because he thought she was using too much of it He knew she had the habit and still he was selling it to her

TESTIMONY OF DR SIDNEY D ARMISTEAD

Dr Sidney D Armistead was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Dr Armistead testified that he lives in Foley, Ala He treated Mrs Clemmons in 1912 She had nephritis and was pregnant He called Dr Krohn in to see Mrs Clemmons one morning when she was suffering from uremia This was the day after the child was born Mrs Clemmons was conscious He told Dr Krohn the nature of the case and was present when Dr Krohn talked with Mrs Clemmons So far as he knows Mrs Clemmons did not tell Dr Krohn that she had been taking Wine of Cardui He did not hear Wine of Cardui mentioned Mrs Clemmons had been taking laudanum It was a charity case Dr Armistead was at that time a young practitioner and wanted Dr Krohn's opinion, so he went over and called him He did not know whether Dr Krohn went back the same night or the next night He did not see any Wine of Cardui bottles around the house nor any stomach pump He did not see Dr Krohn pump Mrs Clemmons' stomach out, nor did he know anything about it

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he had no idea how much laudanum Mrs Clemmons had been taking He did not know that Dr Krohn was there a second time, so he could not say whether or not Dr Krohn pumped out the stomach He gave her laudanum to take by mouth once or twice He did not see any marks on the patient indicating that she used a hypodermic needle He is familiar with laudanum The dose is ten drops He could not say whether Mrs Clemmons had ever taken Wine of Cardui He never saw her take any of it She may have taken a lot of it for all he knows

After the reading of several depositions an adjournment was taken until Monday, June 5, 1916

June 5, 1916, Morning

TESTIMONY OF MRS E L CORAM

The Court met pursuant to adjournment Mrs E L Coram was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mrs E L Coram testified that she resides in Benevolence, Ga She has known Dr Tanner, of Benevolence, about eight years Dr Tanner treated her about a year ago for blood pressure He also treated her for bladder trouble about two years ago She did not tell Dr Tanner that she had taken any Wine of Cardui She took half a bottle of Wine of Cardui about two years ago, and about seven weeks ago she took a whole bottle She took the half bottle in doses of a tablespoonful three times a day, on the advice of a negro woman This was after the first time Dr Tanner had treated her Neither Dr Tanner nor any other doctor had done her any good Dr Tanner gave her medicine for the bladder trouble—some of it by prescription and some that he brought himself She took the whole bottle of Wine of Cardui about six weeks ago

Q—What did you take it for? *A*—I had a hurting in my side, both sides, and almost everybody thought that it was appendicitis in both sides, and a lady friend of mine asked me to take some of her Cardui She had been taking it for a number of years, and she said she would send me down some

Mr T J Scofield—I object to what she said

The Court—Yes

Mr Fowler *Q*—What were you taking it for? *A*—For this pain in my side

Q—What effect did it have? *A*—It did not have any effect, the hurting stopped, that is all I know

The witness stated that she took all of the first bottle of Cardui She did not tell Dr Tanner or anyone else that she took Cardui to brace her up

Cross-examination was waived

TESTIMONY OF MR CARL WHORTON

Mr Carl Whorton was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Whorton testified that he resides in Gadsden, Ala, where he is in the drug business He is acquainted with Dr Appleton and has known him for fifteen or twenty years He also knew Dr Appleton in Center, Ala, at which place Dr Appleton had relatives He considers the general reputation of Dr Appleton for truth and veracity in Gadsden as bad, and from that reputation he would not believe him on oath

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that he is a licensed druggist Dr Appleton's prescriptions are not generally sent to his store, but some of them are The witness is a married man His brother is also a married man and is associated with him in business Dr Appleton is not the family physician of either the witness or his brother

The witness stated that Mr E H Cross and Mr E T Schuler had made statements regarding the reputation of Dr Appleton The city health officer is Dr Murphree, and the county health officer is Dr Camp Mr Whorton stated that he had made statements to Dr Murphree, following some litigation, to the effect that Dr Appleton's reputation for truth and veracity was bad He does not remember that he made such statements to Dr Boozer He may have told Dr Boozer that Dr Appleton was unreliable from a business standpoint He does not know that he ever made such statements to Dr Johnson

The witness sells Wine of Cardui in his drug store Mr Metcalf, agent for the Chattanooga Medicine Co, and Mr Boycan arranged for the witness to come to Chicago He is to receive payment of expenses and $5 a day He stated that he had a conversation with Dr Appleton lately He told Dr Appleton that he did not make the exact statement that he would not believe him on oath, but he did say that he would not believe the evidence he had given in this case

Mr Boycan told the witness that Dr Appleton swore that Cardui was drunk throughout that neighborhood as a beverage and it made habitues of some of its users, and that it had made laudanum fiends out of some The witness does not know whether Mr Boycan told the truth about the names that had been given, nor does he know that the names were given in confidence Mr Boycan mentioned the names

REDIRECT EXAMINATION BY MR FOWLER

Attorneys for the plaintiff endeavored to introduce the content of a statement which Dr Appleton read to the witness The Court refused to admit the witness' memory of the statement but allowed the introduction of the remembrance of the witness' conversation with Dr Appleton The witness stated that Dr Appleton stated that in this statement were words to the effect that Mr Whorton did not say that he would not believe Dr Appleton on oath

TESTIMONY OF MR WILLIAM ACKER COBB

Mr William Acker Cobb was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR FOWLER

Mr Cobb testified that he resides in Center, Ala He has known Dr Appleton for twenty years or longer Dr Appleton lives in Gadsden, Ala, which is about 25 miles from Center The witness is frequently in Gadsden He considers Dr Appleton's general reputation for truth and veracity as bad and he would not believe him on oath

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness testified that he ran a general merchandise store for two years They fill prescriptions and run a drug store now, they sell some patent medicines, among them Wine of Cardui and Black Draught He goes to Gadsden about once every thirty days and to Chattanooga two or three times a year He buys most of his goods in Gadsden and in Rome He has a nephew in Gadsden and a number of friends there, with whom he talked about Dr Appleton

Q —Whom did you hear what you heard from? *A* —Every man whom I talked to

Q —Well whom did you talk to? Did you talk to your nephew? *A* —I dont believe I have discussed the question with my nephew

Q —Who did you touch the question with? *A* —John Doe Bill Jones and another—

Q —John Doe. Now, where does John Doe live? *A* —He lives in Gadsden

Q —What is John Does address? *A* —Gadsden will get him, I guess

Q —What is his business? *A* —Well, we were talking—

Q —No, no what is his business? John Does business? *A* — I dont know where John Doe lives there—there is not such a man, but—

Q —Then you are mistaken when you say you talked to John Doe What did you mean telling me under oath saying that you talked to John Doe and then saying there is no such person? *A* —I mean to say I talked to those people that were there—

Q —I am asking you why you told me that. *A* —That part is not in it.

Q —There is no such man as John Doe, then? *A* —No, sir

Q —Then when you said you talked with John Doe you told a thing that is not true is that true? *A* —That is not in it I would say

Q —You told a thing that was not so? *A* —Yes but—

Q —When you told me that addressing him at Gadsden would catch him? *A* —Yes—

Q —That was not so was it? *A* —No That is not so

Mr T J Scofield —Well that is all

REDIRECT EXAMINATION BY MR FOWLER

Q —What did you mean when you say John Doe and Bill Jones?

Mr T J Scofield —I object to that

THE COURT —I would like to know We may not stop here Go ahead Mr Fowler

Q —Please tell what you mean when you said you had talked with John Doe and Bill Jones? *A* —He wanted to know how—who it was—

THE COURT —No no You dont know what he wanted to know He asked you a question, and asked you who you had talked with, and you said John Doe and Bill Jones

The Witness —Yes Well, what I had reference to was the men who I visited there you know different men—no interest to me at all men who were—I was visiting there—friends of mine there in Gad den

THE COURT —Well, how long have you known this John Doe

The Witness —There ain't no John Doe I just added that in there There is no John Doe—

Mr Fowler —You have heard the legal term—

Mr T J Scofield *Q* —What did you mean when I asked you what John Does address was, and you told me to address him at Gadsden and that would get him? *A* —I mean the way you are asking me who all I did talk to down there—that kind of irritated me because there is so many different men down there—

Q —Yes? *A* —friends of mine, and the inference was—

Q —You did not want to give the names, then? *A* —Oh I dont care nothing about the names no

Q —How did you expect me to reach John Doe who you say told you—talked to you about Dr Appletons reputation by addressing him at Gadsden? You knew there was no such address didnt you—no such person? *A* —Yes

Mr T J Scofield —Well that is all

After some depositions had been read an adjournment was taken until 2 o clock p m the same day, Monday, June 5, 1916

June 5, 1916, Afternoon

The Court met pursuant to adjournment and three depositions were read

TESTIMONY OF MR. FRANCIS P DUNNINGTON

Mr Francis P Dunnington was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR. HOUGH

Mr Dunnington testified that he resides near Charlottesville, Va He teaches in the University of Virginia He began teaching in 1870 and has taught there continuously He knew Dr J W Mallett, who came to the university in 1868 Dr Mallett died in November, 1912 Dr Mallett came to the university as professor of analytic and industrial chemistry He then became professor of general chemistry He taught in the University of Virginia from 1868 to 1912, excepting two years—one when he went to Texas as professor of chemistry, and the next year when he went to the University of Pennsylvania The witness changed this to a medical college in the city of Philadelphia

The witness stated that in his opinion Dr Mallett was one of the leading chemists in the United States as well as in Europe He was also Doctor of Medicine The witness named various scientific societies to which Dr Mallett belonged He stated that Dr Mallett received LL D degrees from four universities—the Johns Hopkins and the William and Mary During 1906 and 1907 Dr Mallett did work for the Chattanooga Medicine Co He endeavored to diminish the amount of alcohol which was put in Wine of Cardui The witness stated that this work ran over several months

Cross examination was waived

After the reading of some depositions an adjournment was taken until Tuesday, June 6, 1916

(*To be continued*)

Correspondence

The Ever Present Question of Dispensary Abuse

To the Editor —Dr J Whitridge Williams, in his address published in THE JOURNAL, June 17, 1916, p 1902, dwelt at some length on the question of dispensary abuse He advocated the socialization of medicine' for the cure of many evils now connected with the practice of medicine Some such system as the *Krankenkassen* of Germany, or the national health insurance law of England, which requires employer and employee, as well as the state to contribute, ought to be adopted in this country Under this system the patient contributes toward the doctors' and hospital fees, with the result that it raises the man of moderate means above the level of a charity recipient, and does not place all the burden of the medical care of the indigent sick on the physician who is often compelled to earn a living for himself and dependents That there is a possibility of the desired social reforms becoming a reality in the course of time we may well assume from the fact that over thirty states have already adopted the workmen's compensation laws, and that a tentative health insurance bill has recently been enacted in New York (THE JOURNAL, June 17, 1916, p 1951)

However, we must bear in mind that it is "a long way to Tipperary" It may take a generation before the wished for reforms come about, we may or may not live to see the day of the "socialization of medicine" As it is, the practice of medicine at present is in a state of transition, and the evils of which many of us complain are apt to be on the increase, as Dr Williams himself admits And yet he thinks that the abuses complained of are less general than is commonly believed The majority of Baltimore practitioners with whom I have spoken feel convinced that many people who are able to pay receive free treatment at the dispensaries These abuses do exist, in spite of the fact that some fortunately situated members of our profession would make us believe that it is all a delusion Whoever read my paper on "Dispensary Abuse," which was published in the *Maryland Medical Journal* in June, 1915, and who is not prejudiced on this question, will agree that this abuse is a serious problem, the solution of which ought not to be deferred In Dr B S Veeder's article on "Standards for Determining the Suitability of Patients for Admission to a Free Dispensary' (THE JOURNAL, July 8, 1916, p 85), I find among the replies, sent by the dispensary authorities to his inquiry as to the methods used in Baltimore to determine the worthiness of the applicant for free treatment, the following statement 'There is no standard, nor is there any attempt at financial investigation,' a fact too well known by many of us in this city The patient who, notwithstanding his ability to pay, resorts to the public dispensaries for purely selfish reasons, encroaches on the legitimate economic interest of the practitioner, and the profession should feel no hesitancy in combating this invasion

Dr Williams maintains that many patients resort to dispensaries to get better treatment, either because they could not be examined properly, on account of the lack of equipment in the office of the average general practitioner, or because the doctors whom they happened to consult were not efficient The inefficiency of medical men should be a diminishing factor in driving patients to dispensaries, since medical colleges are turning out better educated and more competent men from year to year When it comes to our specialties, there is no justification for a person in good circumstances to frequent a dispensary, for he will usually find the same physician conducting the free clinics Now this physician could surely treat him just as well, if not better, at his private office, where he has more time at his disposal If the patient does resort to the dispensary, it is merely to avoid parting with his cash On the other hand, if one medical man treats him carelessly, he is at liberty to go to another who will treat him properly, but he has no moral right to go to a free clinic As I have stated in the paper above referred to, the bestowal of free treatment on those who can afford to pay exerts an evil effect in many ways Not only does it stunt the moral sense of the applicant, and weaken his self-reliance by making him a recipient of charity, but it also robs the deserving physician of part of an income

Dr Williams justly asserts that a private practitioner cannot compete with a well equipped dispensary, which has a number of trained nurses and a well organized social service department at its disposal But why should members of an honorable profession be permitted to become victims of circumstances over which they have no control?

Socialization of medicine would probably be the best solution for many of the difficulties we are up against, but shall we, when so much can be done in the meanwhile to mitigate the evil, fold our arms and do nothing until this question adjusts itself in a remote future?

The dispensary abuse should be mitigated, and if the remedy is only temporary, it should, nevertheless, be applied until the relation of medical practice to society is properly adjusted Dispensaries of the better type in this city have social service departments, and the one attached to the Johns Hopkins Dispensary is a model of its kind However, it would add to its laurels by becoming a potent agency in wiping out an abuse which does great harm to a goodly part of our professional brothers All that the dispensary authorities would have to do would be to refer every applicant whose personal appearance does not indicate that he is poor or needy, for investigation It is an old axiom, "Where there is a will, there is a way"

Another means of overcoming dispensary abuse would be the adoption of medical partnerships, or the group plan, already in vogue in many communities By means of this plan, men of various specialties would combine, e g, a roentgenologist, the laboratory man, the internist, the eye, ear nose and throat specialist, etc Consequently there would be no excuse for a patient to frequent the public dispensary for a diagnosis requiring either the use of different apparatus, not to be found in the office of the average practitioner, or the consultation of different specialists

M M Savage, M D, Baltimore

Statistics on Hay-Fever Plants Wanted

To the Editor —As the fall hay-fever season commences in most localities in August, the American Hay-Fever Prevention Association requests interested observers in each state to report on any or all of the following points

(1) Beginning of the florescence of the (a) common rag-weed (*Ambrosia elatior*), (b) giant rag-weed (*Ambrosia trifida*), (c) the western rag-weed (*Ambrosia psilostachya*), (d) the cockle bur (*Xanthium pennsylvanicum*), (e) marsh elder (*Iva ciliata*), (f) the western marsh elder (*Iva axillaris*), and (g) the gaetnerias These plants bloom in most sections in August and September, and are all wind-pollinated and potentially hay-fever plants

(2) The date of the beginning of fall hay-fever in these sections, and the coincidence of its development with the florescence of one or more of these plants

A large number of replies will increase the statistical value of the reports Any other statistical information will be appreciated Address American Hay-Fever Prevention Association, Audubon Building, New Orleans, La

W Scheppegrell, M D, President

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

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CITY AND RURAL HEALTH

To the Editor —Within the past several years, I have noticed some articles relative to country life conditions, and that the rural sections were less sanitary than the city I think I have also seen somewhere the statement or opinion given that most of the epidemics in the city came from the country, and that the death rate in the country was greater than in the city I cannot recall the article or writers Have careful investigations been made in the last several years, and do they bear out the foregoing statements? I have seen some statistics, but some of these are thought inaccurate, as those of the city often include deaths of persons brought in for better care and treatment, there are usually no regulations requiring accurate records in the rural sections, and so on

Any information regarding the foregoing will be greatly appreciated

D T Kizer, M D, Springfield, Mo

Answer —There can be no doubt that the average sanitary conditions are worse in the rural districts than in the large urban centers except so far as overcrowding and its direct effects are concerned It is notorious that the means for the disposal of excreta are more generally bad in the country than in the town, although it is true that in some parts of some cities wretched conditions in this respect are still to be found The chances of contamination of the water supply by such insanitary dispositions are evidently far less in the town tenement with its piped supply than in the village communities or farms where the water is taken from an open stream or from a shallow well Animals which are liable to serve as distributors of parasitic diseases constitute a greater danger in the country than in the town Breeding places for flies are the commonplace of farm conditions, the exception in the town Finally, the administrative sanitary control of the towns is better The statement that most of the epidemics in the city come from the country is evidently too general The majority of epidemics commence with preexisting cases, and those cases may as well exist in the town as in the country, and in the former, owing to the congestion of population, there is larger opportunity for infection by contact On the other hand, certain diseases lend themselves peculiarly to propagation by means of products—notably milk—of the rural districts which are sold in the towns It is therefore to be expected, and it has been proved, that a large number of urban epidemics of such diseases as typhoid fever, germs of which may lie latent in carriers and be propagated by products like milk, are traceable to a rural source The insanitary conditions which prevail in the country are, however, largely outweighed by the overcrowding in the towns, as is proved by the relative death rates The life tables just published by the Bureau of Census (United States Life Tables, 1910, Bureau of the Census, Department of Commerce, copy sent free to every medical man on application to Director of the Census, Washington) give a series of tables of the vital statistics for the white population in the cities and in the rural part, respectively, of the original registration states These tables are based on the estimated population, 1910, and on the reported deaths in 1909, 1910 and 1911 We quote from pages 38 to 45, column 7 This column shows the numbers of the population living in age interval, to one death in the same age interval (calculated for a hypothetic stationary population) The higher the figure the lower the mortality

These figures definitely dispose of the allegation that the mortality in the country is higher than in the town It is nevertheless certain that there is in the rural districts a great deal of preventable disease, and there is some indication that the young rural population has a higher morbidity than the young people of urban districts This state of affairs is in part attributable to the notoriously defective condition of the rural schools from the point of view of sanitation It is not surprising, therefore, to find the great advantage of rural environment shown by mortality returns for other periods of life markedly diminished for white males between the ages of puberty and 25, and reversed for white females during the same age periods The urban females show a lower mortality than their rural sisters between the ages of 18 and 25 Accurate statistics are not available but such as exist indicate that the relatively increased mortality among adolescents and young adults in rural districts is largely due to communicable diseases, and especially tuberculosis

POPULATION LIVING IN AGE INTERVAL TO ONE DEATH IN THE SAME AGE INTERVAL

Age Interval	Cities		Rural Parts	
	White Males	White Females	White Males	White Females
0-1	6 77	8 50	8 91	11 01
11-12	410 63	476 24	454 46	[illegible]
21-22	159 63	[illegible]	191 73	209 11
25-26	174 10	191 06	154 57	131 01
45-46	65 31	85 75	115 60	127 59
60-61	25 47	32 12	43 16	40 31

USE OF TUBERCULIN AS A DIAGNOSTIC AGENT

To the Editor —Please give me a bibliography on tuberculin as a diagnostic agent.
E R Van der Slice M D, Marquette, Mich

Answer —The following is a partial list of references on the subject for the last two years

Brown E M Diagnostic Value of Cutaneous Tuberculin Tes in Recruiting *U S Naval Med Bull* July 1914

Kinghorn H M Comparative Value of von Pirquet and Subcutaneous Tuberculin Tests in Diagnosis of Tuberculosis in Adult, abstr The Journal July 25 1914 p 349

Frehn W. Sensitization Index with Tuberculin Skin Reaction *Beitr z klin d Tuberk* July 30 1914 abstr The Journal Jan 2, 1915 p 90

Kraemer C Subcutaneous Tuberculin Reaction in Diagnosis, *Munchen med Wchnschr* Jan 12 1915

Vos B H Tuberculin in Diagnosis and Treatment of Pulmonary Tuberculosis *Nederl Tijdschr Geneesk* Jan 23 1915

Rogers O F Jr Study of Children with Positive Skin Tuberculin Reactions *Boston Med and Surg Jour* Feb 4 1915 abstr The Journal Feb 20 1915 p 695

Cattermole G H Tuberculin Tests in Children of Colorado The Journal Aug 28 1915 p 782

Von Litzner M Detection of Focal Reaction after Tuberculin Test *München med Wchnschr* Aug 10 1916 abstr The Journal Sept 25 1915 p 1148

Glover E G Subcutaneous Tuberculin Injections and Diagnosis of Pulmonary Tuberculosis *Brit Jour Tuberc* October 1913

Clovis E E Use of Tuberculin in Diagnosis of Pulmonary Tuberculosis *West Virginia Med Jour* February 1916

Selter H Intradermal Tuberculin Reaction in Diagnosis of Tuberculosis in Guinea Pigs *Deutsch med Wchnschr* Jan 20 1916 abstr The Journal March 11 1916 p 845

Zitronblatt A Y Skin Tuberculin Test in Surgical Practice *Russk Vrach* 1915 xiv No 30 abstr The Journal March 11 1916, p 850

ROENTGEN RAY DERMATITIS

To the Editor —Can you make any suggestion for the relief or possible eradication of a dermatitis of the hands following repeated Roentgen ray exposures several years ago? The patient is a surgical nurse and has not been exposed for several years but the condition returns from time to time It is characterized by burning and itching and sometimes by pain and the eruption of numerous small vesicles lasting often for several days.
E L C M D

Answer —The patient evidently has a chronic Roentgen-ray atrophy of the hands which become irritated at times—probably from external irritation When these attacks of acute dermatitis occur they may be reduced by the use of wet dressings of solution of aluminum acetate N F Fourth Edition (Burow s solution) 1 part to water, 15 parts Solution of aluminum acetate N F is an 8 per cent solution, which should be made according to the directions furnished in the National Formulary

A few days use of these wet dressings would very likely get rid of the acute attacks Between the acute attacks the hands should be protected from irritation as far as possible It would be desirable to soften them up every night by greasing with a bland ointment like cold cream When keratoses on the hands show evidence of chronic irritation or of increase in size, they should be destroyed This can be done by skilful applications of radium or Roentgen rays, by freezing with carbon dioxid snow, or by excision and putting on small grafts Of course the danger of epithelioma in these hands is great and suspicious lesions should not be neglected but promptly destroyed

Medical Education and State Boards of Registration

New Mexico April Report

Dr W E Kaser secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Santa Fe, April 10-11, 1916 The total number of subjects examined in was 13, total number of questions asked 100, percentage required to pass, 75 The total number of candidates examined was 3, of whom 2 passed and 1 failed Three candidates were licensed through reciprocity, and 13 were licensed on satisfactory credentials The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Memphis Hospital Medical College	(1904)	75
Marquette University	(1914)	85
FAILED		
Mississippi Medical College	(1912)	64

College	Year Grad	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Ensworth Central Medical College	(1905)	Oklahoma
University of Tennessee (1892) Oklahoma	(1907)	Tennessee

College	Year Grad	Total No Licensed
LICENSED ON SATISFACTORY CREDENTIALS		
Hahnemann Medical College and Hospital Chicago	(1897)	1
Central College of Physicians and Surgeons	(1902)	1
College of Physicians and Surgeons Keokuk	(1895)	1
University of Maryland	(1912)	1
University of Michigan Medical School	(1912)	1
Barnes Medical College	(1900)	1
St Louis College of Physicians and Surgeons	(1899)	1
Missouri Medical College	(1886)	1
Bellevue Hospital Medical College	(1896)	1
University of Wooster	(1890)	1
Jefferson Medical College	(1911)	1
Medical College of the State of South Carolina	(1905)	1
Memphis Hospital Medical College	(1893)	1

Massachusetts May Report

Dr Walter P Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, practical and written examination held at Boston, May 9-11, 1916 The total number of subjects examined in was 14, total number of questions asked, 70, percentage required to pass, 75 The total number of candidates examined was 22 of whom 8 passed and 14 failed, including 4 osteopaths The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Bowdoin Medical School	(1915)	78 6
University of Maryland	(1913)	75
College of Phys and Surgs Boston (1911) 75	(1914)	75 4
Harvard University	(1914)	82 2
University of Pennsylvania	(1899)	79
Queen s University	(1915)	75 9
McGill University	(1910)	80 3
FAILED		
Georgetown University (1910) 67 5	(1913)	72 9
Kentucky School of Medicine	(1905)	*
Baltimore Medical College	(1913)	63 9
Maryland College of Eclectic Medicine and Surgery	(1914)	71
Maryland Medical College	(1913)	71 4
College of Physicians and Surgeons Boston	(1913)	63 5
Tufts College Medical School	(1913)	72 2
University of Berlin	(1903)	58
University of St Joseph s Beirut	(1894)	67 8

* Did not complete examination

Preventable Deaths —Half the deaths under one year are preventable For every baby who dies, ten endure unnecessary sickness and many are handicapped for life as a result In localities where a campaign of education has been carried on the death rate among babies has been reduced from 10 to 50 per cent —*Bull Lincoln (Neb) Health Dept*

Book Notices

Treatise on Fractures By John B Roberts, A M, M D, F A C S, Professor of Surgery in the Philadelphia Polyclinic and College for Graduates in Medicine, and James A Kelly, A M, M D, Attending Surgeon to St Joseph's Hospital Cloth Price, $6 Pp 677, with 909 illustrations Philadelphia J B Lippincott Company, 1916

The book opens with a chapter on general considerations Some of the subjects are not given so thoroughly as they might be in view of the added light which has been shed by the Roentgen ray in recent years For example, the time of appearance of the various centers of ossification in the epiphysis is not stated with sufficient accuracy An excellent discussion on general treatment is given, both nonoperative and operative, of recent and old simple and compound fractures Fractures of the skull and face are illustrated by drawings, diagrams and photographs In the chapter on the spinal column the symptomatology of fractures with cord symptoms at different levels is described and illustrated Some of the fifteen rules for operative treatment are too finely drawn and somewhat confusing The valuable ones are Do not operate when there is complete transverse paralysis Operate if later symptoms of returning function appear Operate if there is evidence of partial destruction of the cord, compression from a blood clot or fragment of bone Photographs of well applied dressings illustrate the article on fractures of the clavicle Separation of the lower epiphysis of the humerus is not so common as the statistics quoted would indicate Partial separation in the region of the external condyle combined with juxta-epiphyseal fracture and separation of the internal epicondylar portion are common, but separation of the entire epiphysis along the epiphyseal line is rare except in birth injuries Fractures of the bones of the forearm are discussed The reasons for poor results are stated, and the insistence on complete reduction immediately after the injury is timely Lesions of the carpal bones are discussed too briefly, considering their relative importance, the recent advances in our knowledge and the comparative ignorance of most of the profession on the subject In fractures of the lower extremity the newer operative measures are considered at length Epiphyseal separations, especially of the femur, are given consideration Os calcis and astragalus fractures are described along with their operative treatment Separate chapters are devoted to fractures of the small and sesamoid bones, birth fractures and gunshot fractures The book is well written and supplemented by numerous and excellent illustrations

Stereoroentgenography of the Alimentary Tract By James T Case, M D Four Sections Price, $9 per section (Dr Howard A Kelly's Stereo Clinic) Troy, N Y The Southworth Company, 1915

Since the introduction of the stereoscopic study of operations by Dr Howard A Kelly more than thirty volumes of the series have appeared The four volumes here discussed are devoted to stereoroentgenographic studies by Dr James T Case, whose name has been connected with this work from its inception The material included in the series is divided into four sections Two cover the methods of examination, the interpretation of the plates and the diseases of the esophagus, stomach and gallbladder, the other two concern the intestines About 100 stereoroentgenograms are included in the four volumes By the stereoscopic method the observer is able to appreciate not only the diagnostic points in the fields shown, but also the space relations of the various organs involved Particularly interesting are those showing cases of cholelithiasis, carcinoma of the stomach and the gastro-enterostomized stomach Several pictures are illustrative of normal conditions The text accompanying the stereoroentgenograms is direct and simple and easily understood even by those who have not kept abreast with advances in roentgenology Dr Case also considers the fluoroscopic method and its applicability The method of teaching is chiefly the presentation and analysis of cases, these the author has evidently selected with discrimination from a mass of material The work is excellently and artistically printed

Medicolegal

Sufficiency of Information Charging Practicing Without a Certificate

(State vs Sanford (Wash), 154 Pac R 1114)

The Supreme Court of Washington, in affirming a conviction of practicing medicine without a license, says that the questions suggested for reversal were all based on the information The statute of the state of Washington regulating the practice of treating the sick or afflicted creates a board of medical examiners, and gives such board authority to issue certificates to persons entitled to practice any of the lawful systems or modes of so doing Three forms of certificates are provided for first, a certificate authorizing the holder thereof to practice medicine and surgery, second, a certificate authorizing the holder thereof to practice osteopathy, and, third, "a certificate authorizing the holder thereof to practice any other system or mode of treating the sick or afflicted not referred to in this section" It was contended that the information was fatally defective in that it did not state which one of the three certificates provided for by statute the defendant should have had to enable him to do what the state undertook to charge him with having done, and also in not showing which of the three classifications provided for by the statute he came under But it seems to the court that an information may charge an offense under the statute without including either of these matters The statute, while it may or may not prohibit a person holding one form of certificate from practicing a system or mode of treatment authorized by another, clearly prohibits a person holding no certificate at all from practicing, attempting to practice, or holding himself out to practice, any system or mode of treatment An information, therefore, which charges a person with practicing a form of treatment of the sick and afflicted without having a certificate in any form authorizing him to treat the sick or afflicted states an offense under the statute, even though it does not state the particular form of certificate he should have possessed in order to entitle him to practice the particular system or mode of treatment he actually practiced In the court's opinion the information in the present case, while somewhat crude, was thus definite In effect it charged the defendant with wilfully and unlawfully practicing attempting to practice, and holding himself out as practicing, in the county of King, state of Washington, a system and mode of treating the sick and afflicted known as the "chiropractic method," and with actually treating one Mary B Fox as sick and afflicted by such chiropractic method, all without having at the time of so doing a valid unrevoked certificate from the state board of medical examiners authorizing him to treat the sick and afflicted in such county and state Clearly it would not aid the understanding to include therein a statement of the character of certificate the defendant should have possessed in order to entitle him to practice the system or mode of treatment he attempted to practice, or to state under which of the three classifications provided for by statute a person would fall who practiced the system or mode of treatment employed by the defendant Again, it was argued that the information was fatally defective because it did not allege that the defendant was a resident of King County In support of this it was urged that it is sufficient for the holder of a certificate to record it in the county of his residence in order to entitle him to practice his profession in any county of the state, and that the information, inasmuch as it failed to allege the residence of the defendant, did not negative the idea that his practice in King County was lawful But the allegation was that he practiced in King County without having a certificate authorizing him to practice in that county It might be that, in order to convict him of unlawfully practicing in King County without a certificate, the state would be obliged to show that he had no certificate entitling him to practice in any county of the state, but this fact did not render the allegation insufficient

Class of Errors for Which Physicians and Surgeons Are Liable

(Coffey v. Tiffany et al. (Mo.), 182 S. W. R. 495)

The Kansas City (Mo.) Court of Appeals, in affirming a judgment for $7,500 damages in favor of the plaintiff for alleged malpractice rendering her blind in her left eye, says that the case turned on the question of whether or not a competent, experienced and skilful oculist inadvertently and negligently used a virulent poison when he intended to use a harmless drug. The gist of the action being negligence, the burden was on the plaintiff to establish by proof, first, that a negligent error was made in the treatment of her eye, and, secondly, that such negligence was the direct cause of her injury. A physician or surgeon is not an insurer that he will effect a cure, or that his diagnosis or treatment of the case will be free from honest errors of judgment. He is not required to come up to the highest standard of skill known to the profession, and when he accepts employment is bound only to exercise such reasonable care and skill as usually is exercised by physicians and surgeons in good standing. As to matters of science, an honest error of a legally qualified physician or surgeon cannot afford a cause of action, no matter how injurious it may be to the patient, while in matters of art, that is, in the performance of surgery, or in the application of remedies, his negligent errors are held to be governed by the ordinary rules of negligence. Thus a physician should not be held liable for erroneously, but honestly, deciding to perform a surgical operation on a patient, for that would be an error in a matter of science, and the law would be too harsh and severe should practitioners of medicine or surgery be held to know at their peril what were best to be done in a given case. But a surgeon who uses an unclean or rusty knife in an operation, or a physician who administers a dose of medicine without knowing what it is, would be guilty of failing to exercise reasonable care, since an ordinarily careful surgeon or physician would not use an unclean knife or administer a medicine without knowing what it is. The court agrees with counsel for the defendants that mere proof of a failure to cure, or that a bad result appeared to follow the physician's treatment, of itself, would raise no presumption of absence of proper skill and attention or of negligence in giving the treatment. The practice of healing, throughout the ages, has been esteemed one of the noblest and most useful of human activities. It is to the interest of mankind that it should engage the attention of the highest ability, skill, and devotion to the conservation and development of the race, and the law will not array itself against this manifest interest by allowing the stamp of guilt or recreancy to be placed on an honest failure to cure, since every physician, no matter how careful and skilful he may be, must fail in many cases to benefit his patients. As a whole the evidence in this case would support the hypothesis that the plaintiff went to the defendant's office with a comparatively well eye, received a treatment that immediately put out its sight, and that the application to her eye of a 1 per cent. solution of atropin sulphate or of an 8 per cent. solution of ethyl-morphin hydrochlorid could not and would not have produced such an injury. Under such hypothesis, which was well supported by reasonable and creditable evidence, the inference followed, not as one built on other inferences or conclusions, but as one forced by its evidentiary elements, that the defendant who treated the plaintiff, despite his assertions to the contrary, put some other liquid into her eye than that he thought he was using. Of course, he did this unintentionally, and in the mistaken belief that he was using the proper solution, but such a mistake cannot be considered in any other light than as one not of science, but as the result of a lack of reasonable care and therefore one for which an action will lie in favor of the injured patient. It did not devolve on the plaintiff to prove the kind of poison the defendant put into her eye. Nor did her burden of proof require the introduction of expert evidence to support her charge of negligent poisoning.

Society Proceedings

COMING MEETINGS

Colorado State Medical Society, Glenwood Springs, Sept. 5-7.
Michigan State Medical Society, Houghton, Aug. 15-17.
Oregon State Medical Association, Portland, Sept. 9-10.
Utah State Medical Association, Salt Lake City, Sept. 12-13.

MEDICAL SOCIETY OF THE STATE OF NEW JERSEY

One Hundred and Fiftieth Annual Meeting, held in Asbury Park, June 20-22, 1916

The President, Dr. William J. Chandler, South Orange, in the Chair

Indications for Surgery

Dr. Edward J. Ill, Newark: Operation should be considered only when it is necessary to save the patient's life from a real or impending danger, or when it is necessary to restore him to health. In the former instance the indication is absolute, in the latter the choice should be left to the patient. Indications for operation must never be based solely on laboratory or Roentgen-ray findings, though these may be of incalculable value as corroborative evidence. Simple adherent or displaced ovaries should not be removed. All ovarian neoplasms should be thoroughly removed; fibroids of the uterus should be removed only for good and sufficient reasons. In over 550 operations for fibroids, I have never seen malignant degeneration, or a recurrence of malignancy after operation. Acute, simple inflammatory or suppurating diseases of the genital tract rarely need operation. More poor work is done in obstetric surgery than in any other branch save abdominal surgery. In many instances of abnormal labor, cesarean section has become the least mutilating and the safest of any obstetric operation. Labor should not be induced before term for the convenience of the patient, the nurse or the physician, but only with all the indications and care of a major operation.

Education of the Nurse

Dr. Gordon K. Dickinson, Jersey City: The question comes up whether it is fair to the applicant, who comes to the hospital to be trained, to use her as much as she is used for the convenience of the institution and to neglect so largely bedside training. Too often this training is left to a subordinate while the nurse paid for this service is seldom seen at the bedside.

Early History of the New Jersey Medical Society

Dr. William J. Chandler, South Orange: In 1766, the year in which this society was founded, New Jersey was a province in the continental possessions of the British government. The Rev. Robert McKean of Amboy, the first president of this society, was a missionary sent from the Society for the Propagation of the Gospel in Foreign Parts. In order to do this they inserted an advertisement in the New York *Mercury* calling a meeting at New Brunswick, June 27, 1766. One of the important matters that came before the society was the arrangement of a fee table for medical and surgical services. The fee for an ordinary visit was 1 shilling 6 pence, and about 1 shilling a mile for mileage. While the fees were small, the doctor furnished medicines, blisters, cups, bleeding, enemas, etc., for all of which he charged, and frequently the bill for these items far exceeded the actual fee. Some of these charges were as follows: Consultations, 15 shillings; plebotomy, 1 shilling 6 pence; amputation of an arm, 3 pounds; delivery in natural labor, 1½ pounds. Local or 'inferior' societies were established at once in conformity with the constitution. It was designated that they were to meet every two months and were to report their proceedings to the general society at its semiannual meetings. The second meeting of the society was held at Elizabethtown, Nov. 4, 1766. In the constitution of the society it was stated that its purpose was 'the advancement of medical science, the elevation of professional character, and the rendering of efficient service to mankind.' The society early took cognizance of the importance of medical education and agreed that "for the advantage of the youth and the honor of the art of medicine" no man should be taken as an apprentice who was not competent in Latin and did not have some knowledge of Greek, and no man could take less than four years as an apprentice and one year in some school of medicine in this country or in Europe

Cancer

Dr John G Clark, Philadelphia Any ulcer that does not heal has cancer potentialities Childs of England has well pointed out the danger signals in cancer These are as follows

1 A small lump of any kind in the breast of a woman over 35 years of age is a starting point of cancer in 90 per cent of the cases, the findings of a lump in the breast should be followed by its immediate removal

2 The danger signal in cancer of the uterus is irregular bleeding, especially after the menopause, or a change in the character of the discharge

3 The danger signal in cancer of the lip, mouth, tongue or skin is a wart or sore that will not heal

4 In cancer of the stomach and intestines the danger signal is not so apparent, obstinate, persistent diarrhea, vomiting, or the passage of blood are danger signals that should be heeded at once

During the last two years we have treated forty-nine cases of inoperable cancer of the uterus with radium Our experience has shown that during the last ten years, for every fifty cases subjected to operation, 250 have been abandoned as hopeless Although radical operation has given the best ultimate statistics, the primary death rate has been unavoidably high, and serious postoperative sequelae have occurred The abandonment of extensive glandular dissection is justifiable because it adds to the hazards of operation but does not increase the number of permanent cures There is no middle course in cancer of the cervix The surgeon had better perform a simple vaginal hysterectomy or a high amputation of the cervix with extensive cauterization than to attempt the radical operation if he is not prepared to execute details If the growth has invaded the parametrium to a point beyond the outer limits of the ureters, or has found lodgment in the iliac glands, the case must with rare exceptions be regarded as hopeless so far as surgical extirpation is concerned In cancer confined to the fundus, recurrence does not take place in more than 50 per cent of the cases, while in cancer of the cervix only about 30 per cent of the cases escape recurrence Surgical extirpation should be attempted only in clearly operable cases, leaving the large remainder to seek relief through therapeutic measures During the last two years, forty-four inoperable cases of cancer of the uterus, vagina and urethra have been treated by the application of from 85 to 100 gm of radium in a platinum capsule shielded by rubber for twenty-four hours This treatment was repeated at the end of six weeks With two exceptions there were no disagreeable effects from the radium We have adhered to the rule never to operate in any case that was healed locally by radium This series shows that radium is no universal panacea for cancer, even when the growth is strictly localized, but it possesses certain advantages The stay in a hospital required in operative cases averages three weeks, when radium is used, three days The postoperative results of the Percy method fall far short of the results obtained by radium Removal of the uterus in cancer of the fundus has given such good results that one is not justified in taking chances with radium In cervical growths the opposite is true In the borderline cases of cancer of the cervix we employ radium

The Morbidity of Childhood and the Mortality of the Second and Following Decades

Dr Thomas N Gray, East Orange My object is the prevention of those deaths which occur in later years which may be due to the diseases of childhood which are preventable through the prophylaxis of noncommunicable diseases, through foreknowledge and thorough examination of the patient, and immunization against communicable diseases There is a possible etiologic relationship between rheumatism, diphtheria, scarlet fever, measles and whooping cough in the first decade of life, and heart disease, chronic nephritis and pulmonary tuberculosis in the second and third decades of life We know that scarlatinal rheumatism may cause many cases of endocarditis and damaged heart valves In a child, typical polyarthritic manifestations of rheumatic infection are a common occurrence, and the cardiac complications of rheumatic infection are not only more common in the child than in the adult, but, as a rule, are more severe I believe that a large percentage of the deaths in later years from organic heart disease and nephritis are due to the preventable diseases of childhood In diphtheria many physicians wait for the report from the laboratory before giving antitoxin, and too many discard their suspicions of diphtheria on the receipt of a negative report Epidemics of scarlet fever, diphtheria, measles and whooping cough should be controlled as effectively as we now control epidemics of smallpox Health officers have the same authority to control other communicable diseases as they have to control smallpox, but they do not exercise it because they fear public opinion Tuberculosis can be controlled only by the removal of patients with open cases to sanatoriums and by placing infected children in preventoriums To do this would require an adequate sanatorium and preventorium in every county There is only one reason for the inadequate sanatoriums in this state, and that is the failure to appropriate enough money This failure is due partly to a lack of appreciation of the need for sanatoriums and partly to the deterring fear of a rise in the tax rate Sanatoriums without preventoriums will lead to an endless chain of expenditure with no hope of ultimately controlling the disease The fact that tuberculous cows remain in our herds is not the fault of health boards, but is due to the injustice of the law which allows the dairyman but a nominal price for his slaughtered cow and takes from him the value resident in hide, hoofs, fat and meat if it is salable

DISCUSSION

Dr Herbert W Johnson, Haddonfield Dr Louis I Dublin published an article in The Journal of the American Medical Association, May 27, 1916, in which he made an analysis of 1,153 cases of scarlet fever in reference to their sequelae In this series there were ninety deaths, eleven of which showed distinct kidney involvement Heart conditions were recorded in seven fatal cases Of 1,063 cases in which the patient survived, it seemed that the mortality of the survivors as a group showed apparently no increase It was of interest, however, to find that of eighteen deaths which occurred within four years, three showed a record of endocarditis These cases might reflect the impairment caused by the scarlet fever There were five deaths from respiratory diseases and four from tuberculosis Apparently among the survivors of the primary disease, the kidneys were not sufficiently impaired to cause early death It is quite possible, however, that ultimately there may be an increase in the expected number of deaths from kidney lesions, although such a consequence may not manifest itself until ten or more years have elapsed after the initial incidence of the scarlet fever Communicable diseases cannot be controlled effectively until we have well trained, full time health officers and good nurses to assist these health officers Parochial schools should have medical inspection just as the public schools have The truant officer can be of great assistance in reporting communicable diseases All communicable diseases should be quarantined as rigidly as smallpox, by such stringent measures they might be as effectively controlled

Dr Henry H Davis, Camden We want local boards of health to do better work, but the people do not want the tax rate raised The problem is how to get the money The people should be educated to demand that these diseases be controlled When the community makes this demand, the money will be forthcoming

Dr Alfred F Hess, New York We now recognize that most of the ills of adult life are contracted in childhood and infancy Tuberculosis is one of the most important of these I happen to be in charge of the first preventorium for infants in this country This preventorium is located at Farmingdale, about 10 miles inland from Asbury Park This institution accommodates from 180 to 200 children of tuberculous parents We have been trying the experiment of taking the infants of tuberculous mothers before they have become infected We have thus far taken twenty-five such babies, all giving negative von Pirquet reactions Many of these babies were taken from mothers who were in tuberculosis sanatoriums In about one half of our cases the mothers died within a year or so, and the children could then be returned to safe homes In some instances the mothers were cured and it was safe to send the babies home This is an important way to attack the tuberculosis problem

Dr Julius Levy, Newark Real prevention will not come through preventoriums but through bettering living conditions The effort to control tuberculosis by placing its victims in sanatoriums only presents the problem of constantly increasing accommodations in institutions In my opinion the infant should be left with the tuberculous mother if she is able to nurse it and can be instructed as to how to protect the infant from infection Breast fed babies are less liable to contract infections and possess a higher degree of resistance than bottle fed babies Every child with an infectious disease, no matter how mild in form, should be kept in bed for a week

Dr Alexander Marcy, Riverton Public health work is entirely different from the practice of medicine If we want men to do efficient public health work they must be trained to do that work. In New Jersey, every health organization must have a licensed health officer, and the state health board provides for these examinations Many of the men who have practiced medicine and take these examinations, judging from the results of the examination, know less about public health work than some men who have never studied medicine A man who wants to do public health work should go to some institution and take a course in public health and sanitation, and graduate as he did in medicine Our need is for trained sanitarians, trained health officers and trained medical inspectors As to our medical men becoming organized and becoming a unit, if that could be realized it would be impossible for any body politic to stand before a united profession

Dr Linn Emerson, Orange The opinion has been expressed that what is most needed to control tuberculosis is sanatoriums for advanced cases Sanatoriums are conducted with the idea that the one thing to be considered is the percentage of cures, and if a patient is in the last stages and cannot be cured he is sent home in order to keep down the death rate in the institution He then infects some one else in the home In a couple of years this individual goes to the sanatorium and the same thing is repeated, and in the end the entire family is probably infected All the money spent on preventoriums is as good as wasted so long as persons with communicable cases are turned loose on the community

Dr Herman Gross, Metuchen Working conditions in factories are responsible for a great deal of tuberculosis Both sanatoriums and preventoriums will fail to control tuberculosis so long as working and living conditions of the working people are not what they should be I know of one factory where 50 per cent of the women come down with tuberculosis three years after they begin work More should be done to control the conditions under which employees work in factories

Dr B D Evans, Morris Plains If anything practical is to be done we must begin with a campaign of education People should be taught the dangers of measles, and the children in the public schools should be instructed in reference to these dangers just as they are now told of the dangers of alcohol, tobacco smallpox and tuberculosis If people are taught the gravity of the sequelae of communicable diseases, a public sentiment can be created, and when there is a request from state or local boards of health for money for the control of communicable diseases, it will be forthcoming This society should be behind such a campaign of education

Dr Thomas N Gray, East Orange I agree that the underlying problem is one of economics, but we must deal with conditions at the present time and as we cannot do anything to remedy economic conditions we must have sanatoriums and better isolation and better protection must be enforced by health boards Tuberculosis is not contracted in the open air but is essentially a home disease We should have sanatoriums in every county with sufficient accommodations to provide for every open case of tuberculosis, but sanatoriums without preventoriums will not stop the spread of tuberculosis

Classification, Prognosis and Treatment in the Nephritides

Dr Martin H Fischer, Cincinnati The effect of water and sodium chlorid in nephritis can be authoritatively settled only on the basis of the cause of the clinical entity called nephritis We have found that a protein colloid in the presence of a weak acid solution absorbs water and swells up and that the more acid which is added to the solution, the greater is the swelling, we have found, further, that when we neutralize the acid solution we get a shrinking of the protein colloid Sodium chlorid has less activity in this respect than other salts The most powerful salts are sodium tartrate, sodium citrate and sodium sulphate Magnesium sulphate is many times more powerful than the same concentration of sodium or potassium Tissues suffer changes accordingly as they hold more or less water, and the amount of water sucked up is determined by the cells themselves and not by something outside of the cells Nephritis is an edema of the kidney, but it is also a composite of a number of chemical changes occurring in the whole or a part of the kidney These changes are due to a common cause namely the abnormal accumulation of acids and other substances which act like acids If with the abnormal accumulation of acids water is ingested, it is retained and edema results and we get a parenchymatous nephritis After violent exercise that causes an abnormal accumulation of acid in the blood because the blood cannot oxidize the acid as fast as it is formed, we may also find albumin and casts in the urine, even as much as several grams to the liter The same thing may occur in warm blooded animals exposed to the cold The indication is, first, for the administration of alkali second, for the administration of salt, not only in physiologic but in more than physiologic concentration, third, sugar should be given, since a high concentration of sugar also dehydrates, water should be given, but this is not an unmixed blessing, and there should be enough alkali and salt to counteract the effect of the water The idea has been prevalent that to administer salt to the nephritic is to kill him This is incorrect, and furthermore, sodium sulphate possesses advantages over sodium chlorid There is only one form of nephritis and that is the parenchymatous There may be two varieties of parenchymatous nephritis general and spotty" The "spotty" type may be due to infections or the result of an anesthetic or the result of intoxication during pregnancy In this type, if the patient is brought through the acute attack, the prognosis is good In general parenchymatous nephritis the prognosis is much less favorable, as the kidney condition is dependent on arteriosclerosis and one is dealing with a necrosis which is irremovable and irremediable When a patient with parenchymatous nephritis develops general edema, the idea has been that the edema is the result of a cessation of kidney function This is incorrect, since the removal of the kidneys in animals does not produce edema The edema is due to the same cause that produces the disease, to a general toxemia affecting all the tissues including the cells of the kidneys The symptoms which have been attributed to kidney disease are the signs and symptoms of edema of the brain The headache of so-called uremia tells you that the brain is swollen to the danger point It is not true that high blood pressure is a consequence of kidney disease, high blood pressure is dependent on the cardiovascular system and is a compensatory mechanism

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Obstetrics and Diseases of Women and Children, York, Pa

July LXXIV No 1, pp 1 176

1 Surgical Replacement of Retroposed Uterus D Bissell, New York
2 *Case of Carcinoma Uteri Treated According to Percy Method, With Necropsy Findings I W Bancroft, New York
3 Significance of Syphilis in Obstetrics W D Fullerton, Cleveland
4 Vaginal Supravaginal Hysterectomy A Reich, New York
5 Acidosis Complicating Pregnancy, Report of Case Cured by Transfusion A H Ely and E Lindeman, New York
6 Three Cases of Labor Following Ventral Suspension W E Caldwell, New York
7 Training in Obstetrics That State Should Demand Before Licensing Physician to Practice B C Hirst, Philadelphia
8 Treatment of Eclampsia N L Knipe and J Donnelly, Philadelphia
9 Teaching of Gynecology to Advanced Pupil A Sturmdorf, New York
10 Transperitoneal Celiohysterotomy J O Polak, Brooklyn
11 Exercise on All Four as Means of Preventing Subinvolution and Retroversion A C Beck, Brooklyn
12 Dysmenorrhea J W Kennedy, Philadelphia

2 **Heat in Carcinoma Uteri**—Bancroft's patient died with symptoms pointing toward a severe toxemia, and as the necropsy revealed no lesions due to error in technic, the cause of death is attributed to the operation The main facts concerning the findings from the microscopic examination are summarized as follows Certain islands of cancer cells show advanced degenerative changes, reaching in many instances stages of necrosis and dissolution Others show milder grades of degeneration, and still others have apparently not been affected by the treatment The latter cells have all the appearances of viable carcinomatous structures The intervening structures (the musculature and connective tissue surrounding the island of cancer cells), have not wholly escaped injury

American Journal of Orthopedic Surgery, Boston

July XIV, No 7, pp 381 442

13 *Operative Treatment of Infantile Paralysis M H Rogers, Boston
14 Methods of Stabilizing Flail Foot in Infantile Paralysis E W Ryerson, Chicago
15 Stability of Lower Extremity in Paralytics G G Davis, Philadelphia
16 *Operative Treatment of Infantile Paralysis R T Taylor, Baltimore
17 Operative Treatment for Disabilities and Deformities Following Anterior Poliomyelitis C Wallace, New York
18 Spring Balance Muscle Test R W Lovett and E G Martin, Boston

13 **Operative Treatment of Infantile Paralysis**—Rogers says that it is better to do as small an amount of operating as possible in children, as long as there is no development of deformities The various methods have proved of value, the matter of chief importance being a careful study of the needs of the individual case In adults, the results of tendon transplantation, alone or combined with resection of portions of the bony structure, have given good results The Forbes operation, in the author's opinion, is of definite value Astragalectomy has given better results than arthrodesis of the ankle joint in those cases which present very marked deformity

16 **Operative Treatment of Infantile Paralysis**—The various procedures which have been suggested for the relief of paralytic deformities are discussed by Taylor He says Tenotomy, justifiable if a tendon transplantation or transference cannot be done, which will restore the loss of balance of power, and if a brace is worn for a sufficient period to prevent recontraction, plus massage, stretching and muscle training of the antagonistic group or groups faithfully employed Of myotomy the same may be said Tendon shortening has been tried and found wanting Tendon lengthening is making the simple operation of tenotomy into more of an operation, without any commensurate gain Tenodesis is justifiable only when the parent muscle has so far undergone fatty and fibrous degeneration that no possible functional use can be hoped for from it, if its tendon is transplanted to some other ataxic region Extra-articular and intra-articular silk ligaments are chiefly indicated in flail joints in which impotent tendons are not to be had for tenodesis

Arthrodesis is not to be recommended except for flail ankle joints in adolescents and adults Articular transposition for calcaneus destroys no joint, throws the weight forward on the os calcis and corrects the deformity without mutilation, but with no increase in power of extension of the foot on the leg unless accompanied by appropriate tendon transplantations into the heel Marked distortions in the long bones, such as knock-knees and bow legs must be corrected before tendon transference is done Removal of portions of small bones of the foot in paralyzed children is unnecessary and may dwarf development "Nerve anastomosis" and the "neurotization of muscles" have not shown anything really practical yet The sheet anchor in the majority of partially paralyzed cases is to be found in tendon transplantation if the case is scientifically studied, and certain fundamental principles are carried out

Annals of Otology, Rhinology and Laryngology, St Louis

March, XXV No 1, pp 1 250

19 Diagnosis of Otitic Cerebellar Abscess A Braun, New York
20 Some Reminiscences, Reflections and Confessions of Laryngologist J N Mackenzie, Baltimore
21 Etiology and Pathology of Otitic Cerebellar Abscess I Friesner, New York
22 Tuberculosis of Middle Ear H B Graham, San Francisco
23 Bilateral Peripheral Paralysis of Musculi Cricoarytenoidei Postici H E Miller, St Louis
24 Correlated Action of Pharynx and Soft Palate, and Its Effects on Postnasal Diagnosis G Sluder, St Louis
25 Treatment of Hemorrhage With Normal Blood Serum H H Forbes, New York
26 Simulation of Paranasal Suppurations for Teaching Purposes G Sluder, St Louis
27 Closure of Postaural Opening Following Schwartze Stacke Operation by Modification of Mosetig Moorhof Method H B Blackwell, New York

Annals of Surgery, Philadelphia

July, LXIV, No 1, pp 1 128

28 *Branchiogenic Carcinoma F Warner, Columbus
29 *Therapeutics of Chronic Nontuberculous Suppurative Bronchiectasis H Lilienthal, New York
30 *Handling of Children With Tuberculosis of Spine While They Are Under Influence of Anesthetic W G Elmer, Philadelphia
31 Element of Error in Abdominal Diagnosis H L Foss Danville
32 Surgery of Gallbladder C U Collins and G H Weber, Peoria, Ill
33 Cysts of Urachus Report of Case J W Means, Columbus
34 *Transplantable Chondro Osteosarcoma in Dog J E McWhorter and F Prime, Jr, New York
35 Traction Bandage for Reduction of Fracture of Leg H D Collins New York
36 Sliding Graft and Kangaroo Suture in Fresh Fractures, Albee Technic W Lathrop, Hazleton
37 Fractures of Femur W L Estes, South Bethlehem

28 **Branchiogenic Carcinoma**—A case of epidermoid carcinoma, seemingly taking its origin from epithelial embryonic inclusions of the second gill cleft is cited by Warner The tumor was removed It showed microscopic evidence of very rapid growth, in that the epithelium presented many mitotic figures, and the cancer cells having very little supporting connective tissue It reoccurred within three weeks, and another surgeon operated less than three months after the first operation, and a little over three months since the first manifestation of the disease He died on the operating table No secondary manifestations had declared themselves No postmortem was obtained Warner says that any hard swelling in the region of the branchiogenic clefts should immediately arouse suspicion of branchiogenic carcinoma, especially if associated with pain as a prominent symptom

29 **Therapeutics of Suppurative Bronchiectasis**—After an experience with twenty-six cases since 1910, Lilienthal is convinced that palliative treatment should be reserved for actually hopeless cases, such as those of bilateral involvement or those in which the condition in one lung is so

extensive and complicated by adhesions that extirpation is clearly impossible A single focus, or multiple foci in one lobe, should be removed surgically Even when an abscess has extended so as to implicate neighboring lobes in one single infected mass, extirpation may be performed successfully Lilienthal reports seven cases in which extirpation was performed or attempted Of the six cases in which the operation could be completed there were four cures One patient, whose case was badly chosen for extirpation, died as the result of an exploratory operation

30 **Tuberculosis of Spine**—Elmer cautions against careless and unnecessary manipulation of the child He says that a child suffering with tuberculosis of the spine, and while conscious and in full control of its voluntary muscles, is a very different object from the one which lies unconscious and relaxed under an anesthetic The power of voluntary control and self-protection is entirely lost under an anesthetic The spine sags and bends when the child is lifted, and torsion at one end of the spinal column is carried segment by segment the length of the spine, one vertebra rotating on the next one, to the limit of motion, and so on down There is another factor to be considered The intimate relationship of the great, the lesser and the smallest splanchnic nerves to the thoracic vertebrae is important Stretching and tearing of these delicate nerve structures so close to the spinal axis may produce sudden and severe shock Likewise compression or pinching of the nerve tissue may produce shock. Elmer cites cases and describes his method of procedure of avoiding such traumas At the time of the operation the child is placed supine on the table the front of the plaster jacket is then removed and the anesthetic started A few minutes later the front of the jacket is replaced and held firmly in place by two assistants while the child is turned over into the prone position The back of the plaster jacket is removed the operation performed on the spine a light gauze dressing put on, and the back of the jacket with its cotton replaced fastened firmly with girdles of adhesive plaster and the child returned to its bed In this way all twisting and unnecessary movements of the spine are avoided

34 **Transplantable Chondro-Osteosarcoma in Dog**—McWhorter and Prime record the successful transplantation, through three generations, of a mammary chondro-osteosarcoma of a dog in which development of bone was observed in the first generation of transplants By far the most successful growths took place in very young puppies and particularly in those of nearly the same breed as that in which the original tumor grew The tumor showing bone as found in the puppies of the first generation more nearly resembled the original tumor than did the growths in adult dogs

Archives of Internal Medicine, Chicago

July XVIII No 1 pp 1 136

38 Introduction to Third Report of Robert M Thompson Pellagra Commission of New York Post Graduate Medical School and Hospital J F Siler, U S Army P E Garrison U S Navy, and W J MacNeal New York.
39 *Hereditary Factor in Pellagra C B Davenport Long Island, N Y
40 *Hereditary Pellagra in Spartanburg County, S C E B Muncey, Long Island N Y
41 *Studies in Cerebral Fat Embolism H Gauss Chicago
42 *Systemic Blastomycosis Report of Five Cases H W Wade and G S Bel New Orleans
43 *Metabolism Studies Before and After Splenectomy in Case of Pernicious Anemia. O H P Pepper and J H Austin Philadelphia

39 **Hereditary Factor in Pellagra**—While pellagra is not an inheritable disease in the sense in which brown eye color is inheritable, the course of the disease, according to Davenport, depends on certain constitutional inheritable traits of the affected individual When both parents are susceptible to the disease, at least 40 per cent probably not far from 50 per cent., of their children are susceptible, an enormous rate of incidence in a disease that affects less than 1 per cent of the population on the average While the high incidence is doubtless due to infection it is also doubtless due to susceptibility, for right among the affected children grow up brothers and sisters who have never shown the symptoms of pellagra The importance of the constitutional factors is evinced by the difference in the reactions to the toxin of the disease shown by different families Many families never show mental symptoms, while others usually do In some families the intestinal symptoms are slight or negligible, in others severe and associated with early death In some families the skin eruptions amount to little, other families are characterized by severe ulceration and desquamation of the derma These family differences have all the characteristics of biotypes or blood lines and, Davenport believes, afford the best proof that there is a hereditary factor in pellagra

40 **Hereditary Pellagra in South Carolina**—An analysis of the data collected by Muncey shows no evidence of direct heredity There may, however, be a hereditary predisposition to the disease in those families in which chronic gastrointestinal symptoms have existed for several generations The relatively high proportion of gastric and intestinal diseases among pellagrous families would seem to substantiate this hypothesis Of 105 families in which there is only one case of pellagra, only three give history of intestinal or skin diseases in the ancestors, and only one gives history of antecedent insanity With this predisposition to the disease Muncey suggests that direct contact or life in endemic sections might be the exciting factor necessary for its development

41 **Studies in Cerebral Fat Embolism.**—In view of the profound disturbance in the central nervous system produced by the secondary changes of fat embolism, Gauss says, it is reasonably safe to conclude that these multiple lesions are intimately associated with the clinical manifestations of delirium and coma The author made a very careful study of the brain of one such case His findings are cited

42 **Systemic Blastomycosis**—Several features were noted by Wade and Bel which are unusual to generalized blastomycosis from the pathologic point of view In one case there were extensive lesions of the spleen and liver, apparently due to the blastomyces, in which very few yeast cells could be found In a second case there was an apparent secondary invasion by the blastomyces of a pellagrin suffering from pulmonary tuberculosis In the skin lesion very interesting minute forms were found and specially studied In a third case the heart was extensively involved, the condition being apparently unique Widespread secondary bacterial invasion was noted in the liver, brain and bones In a fourth case there was involvement of the lungs, liver, kidneys and lymph nodes, cutaneous and subcutaneous In the fifth case the lungs, ribs, vertebrae and spinal cord were involved with cutaneous and subcutaneous nodules

43 **Metabolism Studies in Case of Pernicious Anemia**—In an adult with pernicious anemia of a moderately hemolytic type, splenectomy was followed by disappearance of the discoloration of the skin and by prompt and persistent improvement in the condition of the blood and general health Metabolism studies made by Pepper and Austin before and after splenectomy gave the following results A slight positive nitrogen balance before splenectomy was followed by an increased nitrogen retention fourteen days after operation and a return to the preoperative balance after one month The output of uric acid, although never exceeding normal limits showed a decrease of 22 per cent after operation The output of iron through the feces, although never above normal showed a decrease of 40 per cent after operation The excretion of urobilinogen and urobilin in the feces before splenectomy was about three times the normal, two months after operation the output was about one seventh of that before splenectomy

Archives of Ophthalmology, New Rochelle, N Y

July XLV No 4 pp 307 405

44 Some Newer Principles in Dealing With Uncomplicated Cataract D T Vail Cincinnati
45 Studies on Action of Toxins and Protein Degeneration Products on Eye A C Woods Philadelphia and J L Stoddard, Boston
46 Three Years Experience in Sclerocorneal Trephining in Glaucoma W H Wilmer Washington D C
47 Report of Cases of Quinin Amblyopia. J E Weeks, New York

48 Case of Syphilitic Retinochoroiditis Juxtapapillaris, With Microscopic Examination F H Verhoeff, Boston
49 Operative Treatment of Partial Staphyloma of Cornea and of Fistula of Cornea With Conjunctival Flap, Conjunctivo Keratoplasty (Kuhnt) A Knapp, New York

Boston Medical and Surgical Journal

July 13, CLXXV, No 2, pp 35 70

50 Certain Occupations as Contributing Factors to Diseases of Skin C J White, Boston
51 Leonardo Da Vinci's Scientific Research of Vascular System A C Klebs, Washington, D C
52 Hematocele of Tunica Vaginalis, Report of Cases C M Whitney, Boston
53 *Statistical Study of Mortality From Diabetes Mellitus in Boston From 1895 to 1913, With Special Reference to Its Occurrence Among Jews H Morrison, Boston
54 Treatment of Chronic Disease is Problem of Applied Physiology F H McCrudden, Boston
55 *Acute Arthritis Experimentally Produced by Intravenous Injection of Staphylococcus Pyogenes E C Steinharter, Cincinnati

53 **Study of Mortality from Diabetes Mellitus**—Morrison's investigation covers a period of nineteen years, during which there were reported 1,775 deaths due to diabetes mellitus Of these, 127 were among Jews out of a total of 6,936 deaths from all causes, and 1,648 were among non Jews out of a total of 222,532 deaths The ratio of the number of deaths due to this disease to the total number of deaths from all causes is 0 018 among Jews and 0 007 among non Jews The largest number of deaths from diabetes occurred among those of Irish parentage, 656 out of 1,775, or more than one-third of the total There were only eleven deaths from diabetes among negroes in Boston from 1895 to 1913 In Boston, as elsewhere, there has been a steady rise in the death rate from this disease, it was 7 1 per 100,000 inhabitants in 1895 and 21 3 in 1913, or 3 1 per 1,000 total deaths in 1895, and 13 3 in 1913

55 **Acute Arthritis Produced by Injection of Staphylococcus Pyogenes**—The results shown by Steinharter's work indicate that the staphylococcus is apt to localize in the joints and to produce typical lesions of arthritis, if the strain is of proper virulence The organism recovered from the arthritic lesions has a decided tendency to again localize in joints In some cases the arthritis was the only lesion found at necropsy, but in other cases it was associated with one or more other lesions, namely, duodenal ulcer, appendicitis, cholecystitis, myocarditis, pericarditis, endocarditis, nephritis, colitis and myositis According to these experiments, it seems to be true that while the organism used (a staphylococcus) may show a predilection for a particular region of the body, it will not always produce a gross lesion at the expected point of attack In order to produce a gross lesion, it is necessary either for the staphylococcus to be of a certain grade of virulence, or for the tissue in which it has lodged to be suitably altered for the growth and action of the organism This principle demonstrated itself repeatedly in the course of experimental production of gastric ulcer, and again in experimental production of acute arthritis

California State Journal of Medicine, San Francisco

July XIV No 7 pp 259 304

56 Second Thoughts About Salvarsan Therapy W E Stevens, San Francisco
57 Chronic Appendicitis Complicating Pulmonary Tuberculosis J C King, Banning
58 Syphilis of Central Nervous System T G Inman, San Francisco
59 Routes of Infection in Tuberculosis W Ophuls, San Francisco
60 *Statistical Study of Rabies in California J C Geiger, Berkeley
61 Danger of Baths in Patients Suffering From Arteriosclerosis W W Kerr, San Francisco
62 *Tuberculin Therapy, Its Principles, Limitations and Indications W C Klotz, Los Angeles
63 *Simple Treatment of Fracture of Inferior Maxilla E Butler, San Francisco
64 Fracture of Base of Skull Presentation of Patient P R Walters, Dinuba
65 Roentgen Treatment of Goiter H E Ruggles, San Francisco
66 Conservative Treatment of Fractures of Long Bones and of Wounds Complicating Them J T Watkins, San Francisco

60 **Rabies in California**—Beginning April 1, 1913, and ending March 31, 1914, 427 examinations of the brains of animals for rabies have been made in the state laboratory Of these specimens, nine were in such a state of decomposition as to make examination impossible Seventy brains gave negative results and 348 were found positive Three hundred and thirty-nine of the positive cases were diagnosed by the finding of Negri bodies and the balance by inoculation into rabbits and guinea-pigs The animals affected were as follows 317 dogs, fourteen cows, eleven cats, four horses, one goat, one coyote

Four hundred and thirty-six persons were treated with virus The infection came from the bites of dogs in 403 instances, in nine cases from the bites of cats, and in four cases from the bites of coyotes Six people were exposed to rabid cows and three to horses Nine persons took the treatment as a precaution against exposure while doing laboratory examinations for rabies The two remaining cases were inoculated with virus from human cases, one because of a bite and one because the saliva contaminated a fresh open burn

Of the cases of rabies in human beings, three were true failures of the Pasteur treatment, all being severely bitten, two near the central nervous system Eliminating all persons treated who were not bitten, the percentage of failures with virus supplied by this bureau was 0 491, less than ½ of 1 per cent These statistics are extremely important and unique because of the fact that in over 98 per cent of the persons bitten, the animals doing the biting were checked by laboratory examinations, with positive results There were few ill effects following the Pasteur treatment during the period under consideration In one patient some weeks after treatment there was a peculiar twitching of the muscles of the right side of the neck In another patient eleven days following the completion of the treatment there was severe pains in the left eye, later affecting the side of the face This was present at intervals for about a week In one of the patients there was vomiting This occurred every day for a short period of time and stopped after the completion of the Pasteur treatment In another patient the local reactions that usually appear on certain days of the treatment from different strength virus occurred after each injection In four instances subcutaneous abscesses developed The only serious complication reported was a slight paralysis of the lower limbs, with prodromal symptoms of nausea and diarrhea, which occurred several days after the completion of the Pasteur treatment

62 **Tuberculin Therapy**—Klotz emphasizes some very important points He says that the basis for indications and contraindications for tuberculin therapy is an estimation of the degree of reactivity of the tissues at the site of tuberculous lesions This can be determined only by a careful clinical study of each case The principal object of tuberculin therapy is to establish tuberculin tolerance Tuberculin tolerance is not permanent and the protection offered by it is limited The various biologic tests are too variable to serve as safe guides for dosage in tuberculin therapy The dosage in tuberculin therapy is not and cannot be absolute, but must be determined for each individual case, according to the clinical picture Different preparations of tuberculin differ only as to their tuberculin content

63 **Treatment of Fracture of Inferior Maxilla**—Butler recommends the simple wiring of teeth of the inferior maxilla to corresponding teeth of the superior maxilla as a practical, efficient procedure which is easy of application and requires no special instruments or training He says that it is suitable in practically all cases in which the teeth are present Anesthesia is not as a rule required External dressings are unnecessary Any pliable tenacious wire of appropriate size may be used (iron, copper, bronze or silver) Angle's bands are often used by dentists, but are not as easily applied as wire The corresponding teeth of three corresponding positions at least should be included

Kentucky Medical Journal, Bowling Green

July XIV No 7, pp 355 400

67 Uremia H K Orsburn, Owensboro
68 Abdominal Pain O E Bloch, Louisville
69 Some of Uses and Abuses of Obstetric Forceps I J Moore Owensboro

70 Report of Carcinomas of Breast With Metastasis to Liver A J Davidson Lakeland
71 Some Cardiovascular Stimulants and Their Uses I C Aken edt, Louisville
72 Anuria J M Morris Louisville.
73 Management of Normal Labor N M Garrett, Frankfort
74 Pyorrhea and Its Relation to Systemic Disturbances B P Rivers, Jr Louisville
75 Remote Infections Which Have Their Origin in Mouth R H Davis Louisville
76 Dental Malocclusion H B Tileston Louisville
77 Intravenous Use of Radium in High Blood Pressure R R Elmore Louisville
78 Analysis of Anaphylactic Reaction V E Simpson, Louisville

Maine Medical Association Journal, Portland

June VI No 11 pp 389 420

79 Allen Treatment of Diabetes H V Bickmore, Portland

Michigan State Medical Society Journal, Grand Rapids

July XV No 7 pp 327 364

80 Toxemias in Pregnancy F C Goldsborough, Buffalo
81 Treatment of Fractures and Joint Injuries W T Dodge, Big Rapids
82 Treatment of Burns C N Sowers, Benton Harbor
83 Urinary Diagnosis of Pregnancy H A Sharpe L'Anse
84 Ocular Evidences of Vicarious Menstruation J E Gleason, Detroit
85 Dermoid Cyst of Spermatic Cord R E Fox Ancon, C Z

New Jersey Medical Society Journal, Orange

July XIII No 7 pp 359 394

86 Treatment of Diabetes Mellitus. H O Mosenthal Baltimore
87 Hodgkin's Disease I Markowitz, Jersey City

New York Medical Journal

July 8 CIV No 2 pp 49 96

88 Exophthalmic Goiter W H B Aikins Toronto Ont.
89 Vaginal Hysterectomy J C Taylor New York
90 Radium S Tousey New York
91 *Syphilitic Aortic Disease G W McCaskey, Fort Wayne Ind
92 Transmissible Diseases in War P W Huntington New York
93 Syncope Immediately After Administration of Diarsenol S H Likes and H Schoenrich Baltimore.
94 Chronic Interstitial Nephritis F E Park, Stoneham, Mass
95 Trustworthy Nonpoisonous Antiseptic (Calendula Officinalis) W M Gregory Berea Ohio

91 **Syphilitic Aortic Disease**—A case with an anomalous electrocardiogram suggesting ventricular asynchronism is reported by McCaskey A woman, aged 33 years, complained of paroxysmal pain in upper left chest and dyspnea She had had acute articular rheumatism when 13 years of age Eleven years later (nine years ago) she began to have some symptoms of heart disorder The attacks were severe, lasting an hour or longer She had a marked Corrigan and distinct capillary pulse Temperature 99.2 F, pulse 100 Blood pressure (auscultatory method) systolic 170, diastolic 60 mm Hg Pulse pressure 110, at subsequent examination, systolic 160 diastolic 50 Heart Left border 3 cm to left of midclavicular line. Auscultation showed double aortic bruits, not very loud No arrhythmia Otherwise normal No reduplication of either first or second sound could be detected at any time The patient was placed on mercury and iodids She objected to the pain of intramuscular injections, which were followed by protiodid of mercury in doses as large as could be tolerated about one quarter to one half grain three times a day After about three months' treatment the symptoms are very much improved, although there are still occasional attacks The physical signs are changed The diagnosis made by McCaskey is syphilis of the heart and aorta, with evident involvement of the aortic valves

Northwest Medicine, Seattle

July XV No 7 pp 217 248

96 Clinical Consideration and Classification of Diarrhea and Constipation F Epplen Spokane
97 Nerve Blocking as Practical Method of Anesthesia for Abdominal Operations E O Jones Seattle
98 Surgical Consideration of Uterine Prolapse J A Pettit, Portland Ore
99 Treatment of Uterine Hemorrhage H P Marshall, Spokane
100 Some Points of Interest in Cerebral Localization to General Practitioner J T Mason Seattle
101 Rational Treatment of Tuberculosis A. M Kinney, Astoria Ore
102 Treatment of Abscesses in Course of Tuberculous Disease of Joints and Bones L A Rich, Tacoma
103 Governmental Control of Medicine and Prevention of Quackery E L White, Lewiston, Ida
104 Case of Obstruction of Superior Vena Cava Due to Aneurysm of Arch of Aorta R L. Waugh, Seattle

Oklahoma State Medical Association Journal, Muskogee

July IX No 7 pp 185 223

105 Early Diagnosis of Pulmonary Tuberculosis. W W Rucks, Guthrie
106 Tuberculosis H Reed, Oklahoma City
107 Layman's Views on Tuberculosis E K Gaylord, Oklahoma City
108 Inspiration From Chapter in History of Tuberculosis L J Moorman Oklahoma City
109 Role of Heredity in Cause and Treatment of Disease. C W Heitzman Muskogee
110 Case of Nephrectomy During Pregnancy, Report of Case F Y Cronk Guthrie

110 **Nephrectomy During Pregnancy**—Cronk cites the case of a woman aged 27 years Ten days before he saw her she experienced an acute sudden pain in the right flank just under lower border of the ribs It was controlled by morphin The fever ranged from 99 to 105 degrees Urine was dark red and cloudy at first, then became light color with heavy white sediment Blood pressure normal Abdomen full, not rigid Tenderness and rigidity in the left upper quadrant, extending around to the costal margin in front A mass, smooth, tender on pressure, suggests the lower pole on the right kidney Operation disclosed a large right kidney, 2½ by 3 by 6½ inches, firm and very adherent Nephrectomy was done and wound closed with small tube drainage On section of kidney, longitudinally, the pelvis is large (signs of distention) and two pockets, only slightly roughened, containing about 1 c c each of pus and a few shreds of necrotic material (strings of pus cells) Cortex red and swollen

Ophthalmic Record, Chicago

July XXV No 7 pp 325 378

111 Mode of Extracting Lens in Its Capsule E E Maddox England
112 Congenital Coloboma of Lens W B Weidler, New York
113 Rare Tubercular Condition of Eye H R Wright Columbus Ohio
114 Palpebral Syphilis J Rosenbaum, Montreal
115 Method of Operation in Extensive Symblepharon F Krauss Philadelphia
116 Biologic Theory of Sympathetic Ophthalmia H Gifford Omaha
117 Nonoperative Treatment of Incipient Cataract E J Bissell Rochester N Y
118 Foreign Body Lodged, for Years in Superficial Layers of Eyeball Report of Case F R Spencer Boulder Colo
119 Eye Speculum for Cataract Operation W H Wilder Chicago
120 Case of Palsy of External Rectus Muscle with Operation C M Harris Johnstown Pa

Providence Medical Journal

July XVII No 4 pp 174 224

121 Some Random Thoughts on Law and Medicine A. D Hill Boston
122 Anesthetics of Future A H Miller Providence
123 Nitrous Oxid Anesthesia and Analgesia in Obstetrics P P Chase Providence
124 Report on Two Thousand Wassermann Tests Made at Providence City Hospital During Years 1914 and 1915 with Study of Comparative Value of Antigens Used H E Smiley Providence
125 Report on Result of Antisyphilitic Treatment at City Hospital H P B Jordan Providence

Southern Medical Journal, Birmingham, Ala

July IX No 7 pp 579 668

126 Dosage of Digitalis J T Halsey New Orleans
127 *Influence of Injection of Blood on Anemia and Infections in Children J S Davis Dallas Texas
128 Common Sense and Fever Thermometer vs Stethoscope and Microscope in Diagnosis of Early Pulmonary Tuberculosis S E Thompson Carlsbad Texas
129 Rest and Exercise in Tuberculosis T Frazer Asheville N C
130 Bronchial Gland Tuberculosis M E Lapham Highlands N C
131 Recognition and Treatment of Occult Tuberculosis S Von Ruck Asheville N C
132 *Health Conservation Through Life Insurance Companies J L Davis Waco Texas
133 What Life Insurance Companies Can Do for Betterment of Public Health M M Smith, Dallas Texas
134 Relation of Insurance Medicine and Periodical Health Tests to General Practice. W O Pauli, Cincinnati

135 *Hay Fever in Southern States W Scheppegrell, New Orleans
136 Treatment of Urethral Stricture with Special Reference to Retrograde Dilatation G L Hunner, Baltimore
137 Treatment of Scoliosis E S Hatch, New Orleans
138 Acute Infections of Kidney J Hume and S Logan, New Orleans
139 First Aid Package R W Knox, Houston, Texas
140 First Aid to Injured D Eve, Nashville, Tenn
141 Treatment of Compound Fractures S Leigh, Norfolk, Va
142 Primary Treatment of Accidental Wounds J C Bloodgood, Baltimore
143 Syphilis of Eye, Ear, Nose and Throat S Kirkpatrick, Selma
144 Injection of Ganglion of Gasser Through Foramen Ovale H H Martin, Savannah, Ga
145 Case of Dermoid of Corneoscleral Margin A O Pfingst, Louisville, Ky

127 and 132 Abstracted in The Journal, Dec 11, 1915, pp 2118 and 2119

135 **Hay-Fever in Southern States**—As no form of treatment has given satisfactory results in hay-fever, Scheppegrell says, especial attention should be given to its prevention This is simplified by the fact that practically all the plants that cause hay-fever are worthless weeds, already a source of expense to the farmer As the elimination of these weeds means the eradication of hay-fever, every effort should be made to exterminate them When this has been done, it will result in the proportionate decrease of hay-fever cases When the public is thoroughly educated in the causative relation of these weeds to hay-fever, and suitable laws are enacted and enforced to assist in their extermination, hay-fever will cease to be on the list of common diseases

West Virginia Medical Journal, Huntington

July XI, No 1 pp 1 36

146 Acute Surgical Lesions of Abdomen Complicating Pregnancy C R Ogden, Clarksburg
147 Position of Placenta in Utero H G Steele, Bluefield
148 Fracture Dislocations of Spine B B Wheeler, McKendree

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

June 24 I No 2895 pp 873 904

1 Right Side of Heart and Its Relation to Overstrain W Russell
2 *Theory of Blood Pressure Measurement L Hill and J M McQueen
3 *Systolic Pressure in Acute Nephritis R G Abercrombie
4 Congenital Cystic Kidney with Local Diffuse Peritonitis, Surgical Destruction of Part of Kidney, Recovery J D Malcolm
5 *Prevention of Amebic Dysentery J G Thomson and D Thomson
6 *Causation and Cure of Certain Forms of Lunacy R Farrant
7 Treatment of Backward Displacements of Uterus (To be continued) F J McCann

2 **Theory of Blood Pressure Measurement**—The authors point out that to give accurate information on the factors concerned in blood pressure measurement, a scheme must permit of compression being applied to an artery in a pulsatile and not rigid manner, and a rise of peripheral resistance *pari passu* with increasing compression must be arranged for When an armlet or bag of a pocket sphygmometer is made to compress an artery where it lies on bone with little tissue round it—for example, temporal, dorsalis pedis, aberrant radial—it deforms the artery and prevents the passage of the pulse at a pressure less than diastolic The finger of the physician acts in the same way, and therefore cannot estimate the systolic pressure accurately Compression of the tissues surrounding the artery so as to block the venous outlets is essential to accurate blood pressure measurement This congests the blood beneath and beyond the armlet or bag The pulsing of the congested mass of tissues renders armlet or bag capable of delivering a circular compression to the artery, and one which yields to the pulse and prevents deformation of the artery until the systolic pressure is overtopped Sufficient area of veins must be blocked if the blood pressure instrument is to be an accurate one, consequently the bag or armlet must be broad The bag, together with the observer's hand, enclose the forearm, and so makes the bag a pocket instrument equivalent to the armlet Failure to make the bag broad accounts for many inconsistencies in the literature of blood pressure measurement

3 **Systolic Pressure in Acute Nephritis**—Several hundred cases of nephritis occurring among soldiers have been examined by Abercrombie In cases of average severity the pressure was usually raised for a period of from five to ten days after the patient's admission to the hospital, not infrequently, however, the elevation persisted for several weeks, so that the patients were transferred home with the pressure still high During the early stages the systolic pressure usually ranged between 135 and 180 mm Hg, exceptionally, and particularly in association with convulsions, it reached 200 or 210 The pressure was thus lower than that usually seen in chronic nephritis, indeed, a pressure of over 200 was found to be presumptive evidence that the disease was really of long standing A striking feature was the wide diurnal variation which often occurred between the morning and evening blood pressures, as much as 60 mm Hg When the blood pressure was falling from day to day, it usually did so in a series of morning remissions and evening rises, thus forming a descending "staircase" Exceptionally, when the pressure fell unusually rapidly, the evening pressure was lower than that recorded on the preceding morning, such a chart may be compared to that of a case of pneumonia terminating by crisis During the early phase of the disease the pressure rises and falls irregularly, a stage is then reached of morning, remissions and evening rises forming a descending "staircase", subsequently the pressure becomes subnormal, rising later to the normal

In association with uremic convulsions [fourteen cases] the pressure was found to be always raised, but to a variable extent, in some cases it was 200, in others considerably lower, in one severe case the systolic pressure taken a few hours before the fit was 135 Immediately after the fit the pressure was often over 200, probably owing to the great muscular exertion Two symptoms, usually nocturnal in incidence, appear to be specially associated with the great evening rises of pressure—namely, paroxysmal dyspnea and headache Usually the amount of albumin diminished *pari passu* with the fall in pressure, although residual albuminuria often persisted after the pressure had fallen to the normal Sometimes, however, the two curves bore no relation to one another During convalescence transient elevations in the blood pressure occasionally occurred, sometimes they followed an advance of diet, but often they formed a part of a general recrudescence of symptoms for which no cause could be assigned

5 **Prevention of Amebic Dysentery**—The Thomsons insist that all cases of suspected dysentery should receive at once 1 gram of emetin daily at the advanced dressing station, field ambulance, hospital ship, or base hospital This treatment must not be stopped during the transit toward the base until at least 7 grams have been given It is bad practice to omit one single dose The 7 grams should be received in seven days The usual sanitary and hygienic measures are also to be carried out

6 See *The Lancet,* abstract No 13

Lancet, London

June 24, I No 4843 pp 1245 1286

8 Injuries of Eye and Orbit A D Griffith
9 Diseases of Throat, Nose and Ear and Their Treatment i Hunter's Time W H Kelson
10 Removal of Adenoid Growths J L Aymard
11 Operative Treatment of Osteo Arthritis W I de C Wheeler
12 *Agglutination Reaction of Bacilli of Typhoid Dysentery Gro with Normal Serum T R Ritchie
13 *Causation and Cure of Certain Lunacies R Farrant
14 Three Interesting Cases of Gunshot Wounds P C Woollatt
15 Case of Edematous Laryngitis A Kidd

12 **Agglutination Reaction with Normal Serum**—Speaking of the *B typhosus,* Ritchie says (*a*) complete agglutination in a dilution of 1 16 should be looked on with considerable suspicion, (*b*) complete agglutination in a higher dilution (1 32 or above) should be looked on as diagnostic *B par*

typhosus A and B Complete agglutination in a dilution 1 16 is suspicious and in 1 32 or higher may be looked on as diagnostic. *B dysenteriae* (Shiga) Complete agglutination in a dilution of 1 64 and above should be regarded as diagnostic *B dysenteriae* (Flexner) Complete agglutination in a higher dilution than 1 128 should be looked on as diagnostic but in a dilution of 1 128 or lower it cannot be relied on for diagnostic purposes In the case of medical students, laboratory workers and the hospital class of the population, a larger percentage respond to the test in higher dilutions than do normal" members of the population

13 **Causation and Cure of Certain Lunacies**—Farrant made a microscopic examination of sections taken from the pineal, pituitary thyroid and sexual glands, first at different ages and periods of life, second, the effect induced in these glands by acute and chronic toxemias, and third, the changes found in cases of lunacy Clinical examinations were carried out of cases exhibiting signs of enlargement or atrophy of these glands and symptoms of excess or diminution of secretion Similar examinations have been made on all classes of lunacy for the presence of signs and symptoms Mental cases and others have been examined for the presence of toxemias inducing the alteration in the glands and the consequent induction of symptoms of excess and deficiency Bacteriologic examinations have been made of the feces of lunatics and the colons examined postmortem From some 3 000 sections it was found that these glands vary at different ages and periods of life with advance of life they tend to atrophy, that the pineal reacts to certain toxemias, the ultimate result of which is fibrosis The pituitary reacts in a similar manner, the terminal result of which is fibrosis, intermediate stages of hyperactivity are seen and the formation of cysts and adenomas

In primary and secondary amentia atrophy of the pineal pituitary and thyroid were found in three main groups of cases In dementia praecox an alteration was found in the glands which varied with the duration of the case Alteration and degeneration were also found in other cases of dementia In some cases of acute confusional mania melancholia, manicodepressive and other forms of insanity changes were found in the thyroid pituitary and sexual glands The changes varied from hypertrophy to atrophy The thyroid gland was frequently found to be abnormal in children adolescents and adult lunatics The pituitary gland was found sometimes to have given rise to symptoms of hyperpituitarism to apituitarism in idiocy dementia praecox and other forms of insanity Signs of alteration in the pineal were found especially in children and adolescents with consequent symptoms of hyperpinealism and apinealism Alteration was found in the size of the testicles associated with ductless gland changes Hypertrophy of the prostate was often found to be associated with altered mentality and after complete removal cases were frequently associated with depression or melancholia Pyorrhea and carious teeth were found to be frequent accompaniment of lunacy in adults in certain cases signs of chronic intestinal stasis and toxemia were well marked

It is deduced that many cases of lunacy may be classified according to the toxemia present and the change that it has induced in the ductless glands The lines on which beneficial treatment may be carried out based on the above pathology become obvious it may be summed up by saying that toxemias if present should be removed by medicinal or surgical measures and the glands allowed to involute if they are hypertrophied or if they are degenerated with deficient secretions these secretions should be supplied Good results may be expected before cortical brain lesions have taken place

Annales de Gynécologie et d'Obstétrique, Paris

May Jun XLII pp 129 192

16 Puericulture and Obstetrics in France and in Germany (Puericulture obstetricie française et obstetricie allemande) A Pinard To be continued

17 Spontaneous Protection Against Infection From the Small Pelvis (La peritonisation spontanee du bassin de la femme F Chatillon

17 **Spontaneous Protection of the Abdominal Cavity Against Infection in the Small Pelvis**—Chatillon relates that at the gynecologic clinic at Geneva it has long been the routine practice to study conditions found on opening the abdomen and record them hoping thus to get better insight into Nature s methods of protecting against infection from below His present article is based on 100 cases The small intestine is utilized to wall off the pelvis most frequently, next in order of frequency the sigmoid loop, the omentum, bladder, parietal peritoneum, rectum, uterus pouch of Douglas cecum and the serosa of the broad ligaments The small intestine often serves to help wall off a pus pocket or with a series of loops and adhesions, roofs over the small pelvis When the diseased uterine adnexa sag down into the pouch of Douglas they get walled off from the abdominal cavity by adhesions which form between the organs in the small pelvis otherwise the organs above cooperate, or the organs in the small pelvis and the intestines may all aid in the task

Archives de Medecine des Enfants, Paris

May XIX No 5 pp 225 280

18 *Variations in the Glycuronic Acid in the Urine of Infants (Recherches sur les variations de l acide glycuronique dans l urine des atrophiques) H Barbier

19 *Lengthening of the Bones of the Hands and Feet as the Bones Grow Thinner Accompanied by Severe Pains (Dolichostenomelie et dolichostenomelalgie) L Calvo (Id) J Comby

June No 6 pp 281 336

20 Treatment of Chronic Urticaria With Sodium Nucleinate E Weill

21 *Defective Development and Debility in Infants (Des hypotrophies et des cachexies des nourrissons) P Nobecourt Commenced in No 3

22 Interlobar Empyema in Two Infants Cured by Simple Puncture E Gorter

23 *Attacks of Suffocation as Manifestation of Disturbance From Dentition (Cas de dyspnee orthopneique symptome d une poussee dentaire chez un enfant de 15 mois) V N d Oliveira

18 **Glycuronic Acid in Infants' Urine**—Barbier gives the simple quantitative test for glycuronic acid in the urine and the findings in infants before and after a dose of camphor The children are grouped according as the findings are zero or near it those showing a marked increase after the provocative dose of camphor and those showing no change under the camphor Weakly infants that are not thriving give the lowest response but as their condition returns to normal the glycuronic acid content of the urine increases It is thus a reliable index of what is going on in the body as is illustrated by a number of charts One child had an ascending curve until it was given cow s milk when the glycuronuria abruptly declined The milk was then stopped and the glycuronuria climbed up again but dropped anew when cow s milk was resumed demonstrating that this child is unable to digest cow s milk It modified at once the glycuronic acid output and this in itself throws light on the symptoms of intolerance or of intoxication observed under such conditions As long as the glycuronic acid output is low we can assume that the liver is not functioning normally and we must refrain from making demands on it Camphor seems to have a stimulating action on the liver functioning Many of the atrophic infants improved materially under daily doses of camphor The camphor thus serves both diagnostic and therapeutic purposes Among the five cases cited in detail is that of a 6 weeks babe who gained only 9 gm a day for over five months and the glycuronic acid output was very low Then it was given camphorated oil daily and in fifty days it averaged 17 gm a day When the glycuronic reaction has become normal the infant may be able to digest cow s milk, for which it has been entirely intolerant hitherto

19 **Dolichostenomelia**—In the few cases on record of this extreme lengthening and growing thinner of the bones of the hands and feet the condition was congenital and caused no pain It has been called spider fingers arachnodactylia In Calvo s new case the child was apparently normal until the age of 10 Then after a period of severe pains the bones of the fingers and toes began to grow long and spindling The child suffered from intense pains in the head, arms and

legs, with some swelling of joints but no pains in the joints The painful regions were cool and cyanotic, with protruding veins The father had rheumatism, the mother was healthy The child had measles and whooping cough between 9 and 11 The skin and muscles have not kept pace with the rapid growth of the bones, which is one factor in the pains, but otherwise the pains became attenuated as the bones grew spindling Radioscopy shows overdevelopment of the epiphyseal cartilages

21 **Causes of Defective Development and Malnutrition in Infants**—Nobecourt refers to those cases in which no cause is apparent Artificial feeding is one of the principal factors, and defective digestion of fats is common He reviews the various theories that have been advanced and says that none are conclusive The noxious influence is more harmful the younger the child The growth function is most readily upset then, and indigestion and malnutrition check the natural development Each element of the food must be studied to determine which is at fault By careful study of each individual case we may be able to remove the obstacles to natural development Left to itself, the child ceases to grow normally, then it stops growing altogether, then the proteic tissues and the fats in the infant's body are consumed The child consumes itself, and the term of its existence is the limit of this autophagy unless we can arrest it in time

22 **Interlobar Empyema in Two Infants**—Both children had had whooping cough during the last few months One was 15 and one 5 months old, and both had fever and signs of interlobar empyema The condition seemed extremely grave in each case, but in each recovery was soon complete after a simple puncture in the sixth interspace, releasing green but not fetid pus Pneumococci were found in one and staphylococci in the other case The pus was probably walled in by multiple adhesions with no chance for escape, and the pressure was too great to permit absorption Even if all the pus had not been evacuated at the puncture, the pressure was reduced so that the balance was then easily absorbed

23 **Dyspnea from Teething**—The child of 15 months had great difficulty in breathing, increased every time it tried to lie down D'Oliveira ordered the gums rubbed with an anesthetic, assuming that the dyspnea was a nervous trouble connected with teething He has encountered a few cases of spasm of the glottis or convulsions in teething infants presenting indications of rachitis, and this dyspnea was evidently of the same nature He gave the child daily sedative hot baths, with calcium chlorid internally, in addition to the anesthetic for the gums, with promptly favorable results

Bulletin de l'Académie de Médecine, Paris

June 13, LXXV, No 24, pp 697 728

24 *Refusal of Consent by the Wounded to Operations and Diagnostic Measures (Le droit, pour le blesse, de refuser des interven tions ou operations reconnues necessaires pour le diagnostic ou le traitement) J Grasset
25 Treatment of Constriction of the Jaws (Traitement de la con striction des machoires) L Imbert and P Real
26 Frequency of Pleuropulmonary Complications With Extensive Wounds of Nerves and Their Influence on the Outcome (Sur la frequence des complications pleuro pulmonaires et leur role comme facteur de gravite chez les grands blesses nerveux) G Roussy
27 *Favorable Results With Vaccine Therapy of Typhoid in Serbia (Recherches sur la bacteriotherapie de la fievre typhoide, au cours de la campagne recente en Serbie) Petrovitch

24 **Refusal of Consent to Operations or Diagnostic Measures**—Grasset relates that in the hospital for nervous affections among the wounded of Region XVI, the patients often decline to permit general anesthesia for diagnostic purposes, and fifty absolutely refused to let lumbar puncture be done, according to the routine procedure for all the patients Lumbar puncture has been very useful in many cases in the diagnosis of actual lesions, changes in the spinal cord cannot be simulated by the psychoneurotic One patient refused to allow his dropsy to be tapped, and four refused to let blood be drawn for the Wassermann test Others refused to permit the application of a plaster cast Those with actual physical injuries usually accepted the procedures readily The refusals came mostly from tho Grasset calls the psychoneurotics Their example sprea until there have been actual epidemics of refusals Sor of the men shrink from anything liable to cause pain Othe rejoice in their good luck in getting wounded, as it kee them away from the firing line, and they do not care have their recovery hastened and their claim for a pensi reduced He urges the authorities to define the limi of the military physician's authority (See also Par Letter, p 217)

27 **Vaccine Therapy of Typhoid**—Petrovitch states th the mortality dropped to 2 7 per cent under the vaccin therapy as applied in 2,270 cases of typhoid His impressio is decidedly favorable, as no cold baths were given with The doses were small, not over from 5,000,000 to 50,000,00 microbes, killed by heat, and these doses were reduced a the patient's strength declined The dosage should be cal culated to avoid any pronounced local or general reactio A little caffein is given with the second injection usuall to stimulate the pulse

Correspondenz-Blatt fur Schweizer Aerzte, Basel

June 10, XLVI, No 24 pp 737 768

28 Clinical Study of Symptoms, Diagnosis and Prognosis of Differen Varieties of Irregular Pulse (Unregelmassige Herztatigkeit H Ryser To be continued
29 *Disproportionate Growth of the Legs in Length as Tardy Mani festation of Inherited Syphilis (Ueber die Verlangerung de Unterschenkel bei Syphilis congenita tarda) R E Chable

29 **Disproportionate Length of the Legs with Congenita Syphilis**—Chable cites Fournier's statement that he foun some syphilitic bone affection in 38 7 per cent of 212 case of inherited syphilis in children over 2 The tibia was the bone affected in 46 6 per cent of the cases The trouble may be an osteoperiostitis or a gummatous affection The bone curves and seems to grow thicker, and Chable has encountered two cases in which, after puberty, the bones grew abnormally long, the tibias being 10 cm longer than the femurs in one case This excessive growth had begun at the age of 17 In the other case only one leg had grown to excessive length The distance from the iliac spine to the malleolus was 86 cm on this side and 83 cm on the other The tibia on this side and in one leg in the other patient was of the typical saber shape, with the characteristic thickening and periosteal exostoses In the older man (22) the bone substance has encroached on the marrow cavity and already shows signs of eburnification at some points In the other case the bone shows the characteristic softening, the stage of periostitis with hyperostosis being followed by an inflammatory new growth, which likewise encroaches on the marrow cavity The whole bone is thicker than normal The pains and functional disturbances from these changes in the leg bone are liable to be misinterpreted, especially as they may not develop until early adult life Disproportionate length of the leg below the knee should always suggest possible tardy inherited syphilis

Gazzetta degli Ospedali e delle Cliniche, Milan

June 11, XXXVII, No 47, pp 737 752

30 *Fluctuations of the Temperature of the Newly Born (Sulle oscillazioni della temperatura nei neonati) R Costa

30 **Fluctuations of Temperature of Newly Born**—Costa relates that in 100 infants, less than a week old, examination of the temperature every four hours showed in a number a briefly transient rise without any apparently appreciable cause Closer study of the infants, however, disclosed a tendency to slight meteorism as the temperature rose, or there was a slight and fleeting eruption In one the buccal mucosa was noticed to be unusually red as the temperature rose These findings show that the briefly transient fever in these cases has a pathologic basis, even if it is merely the lack of coordinate functioning between the organs with an internal secretion The rise in temperature in this latter group can be regarded as an extension of the limits of physiologic variation

Policlinico, Rome

June 18 XXIII No 25 pp 773 804

31 *Spasm of the Muscles Used in Respiration Five Cases. (Contributo alla clinica delle neurosi respiratorie) A Fara
32 Uterine Hemorrhage From Leech Entering Cervix During Bathing (Metrorragia causata da una sanguisuga penetrata spontaneamente nel collo uterino e simulante un polipo cervicale) P Gaifami

31 **Spasm of the Muscles Involved in Respiration**—Fara describes five cases of what he calls respiratory neuroses The clinical aspect at first glance seemed to resemble nervous asthma, but examination showed the margin of the lungs higher than normal, while the stethoscopic findings were negative, and there was no cough The noisy inspiration and expiration sounded like the panting of a dog The respiration rate was from 150 to 180 during an attack, but the breathing was excessively shallow—the play of the muscles being reduced to almost nothing, the spasm contracting all the muscles concerned in the breathing act The diaphragm in the most extreme case seemed to be paralyzed It persisted immovable in the expiration position while all the other muscles were in the inspiration position The spasm subsided during sleep and also at intervals during the waking hours This patient was a mountaineer of 32, apparently robust except for this neurosis It did not interfere with his work as custodian of a church, but he was unable to do any fatiguing work Emotional factors seemed to aid in bringing on the attacks In the intervals respiration was abnormally slow, and during an attack the respiration sometimes returned to the usual rate when the attention was diverted, as in the course of shaving The four other cases were in soldiers, and the emotional factor was also evident in each

Brazil Medico, Rio de Janeiro

May 27 XXX No 22 pp 169 176

33 Simplified Technic for the Romanowsky Stain (Coloraçao de Romanowsky Um novo processo para obtel a) M França

Siglo Medico, Madrid

May 27 LXIII No 3 259 pp 337 352

34 Psychic Impotency J De Azua
35 Immunity and Hypersusceptibility on the Part of the Skin (Immunidad e hipersensibilidad de la piel) E de Oyarzabal

Prakticheskiy Vrach, Petrograd

XV No 16 17 pp 146 156

36 Efficacy of French Substitute for Salvarsan (Nieskolko slov o frantsuzskom preparatie Arsenobenzol Billon a) J Grunberg

Russkiy Vrach, Petrograd

XV No 15 pp 337 360

37 *Diagnosis of Incipient Spondylitis G I Turner
38 Action of Caucasus Benzines on Living Organisms (O dieistvii Kavkazskikh benzinov na zhivotnii organizm) N P Kravkoff
39 *War Wounds of the Tongue A M Nikolsky
40 Therapeutic Value in Cholelithiasis of New Russian Mineral Spring Water D A Burmin
41 Treatment of Gunshot Fractures of Long Bones I A Tikhomiroff Concluded
42 *Case of Congenital Union of Eyelids Cryptophthalmos. K. G Turovsky

No 16 pp 361 384

43 Individual Metabolism (Individualniy obmien) B I Slovtsoff
44 Assimilation of Proteids by the Animal Body as Viewed by the Polypeptoid Theory of the Proteid Molecule. (Assimiliatsiya bielkovikh tiel zhivotnim organizmon v osvieshtshenii polypeptidnoi teorie stroeniya bielkovoe molekuli) P A Glagoleff
45 War Wounds of the Eyes and Their Operative Treatment A V Lotin
46 The Principles of Functional Treatment of Lesions and Diseases of the Extremities K T Vegner
47 Some Observations Regarding the Action of a Russian Mineral Water L B Kavenokiy

No 17 pp 385 408

48 Organization of Surgical Aid for the Wounded in the Near and Remote Base of the Army V A Oppel
49 *Neuralgia of Tympanic Branch of Glossopharyngeal Nerve. (Neuralgiya Jacobonova nerva) A E Shtsherbak
50 Mixed Vaccination (O smieshannoi vaccinatsii) G D Bielonovsky
51 Organization of Ophthalmologic Aid for Sick and Wounded Soldiers R A. Katz.
52 Treatment of Gunshot Wounds of Long Bones and Large Vessels Complicated With Suppuration N A. Krotkin.

No 18 pp 409 432

53 *Observations on Typhus Fever (Iz nabliudenii nad sipnim tiphom) D K Zabolotny
54 The Role of Anerobic Microbes in Complications of Wounds M N M Aitova and R A Bratlovskaia
55 Mixed Vaccinations Against Typhoid and Cholera A I Bielousova
56 The Best Method of Preparation of Cholera Vaccine P P Mashkovetz
57 The Use of Chlorin Tablets in the Army for Disinfection of Drinking Water N D Archipiants
58 *Regeneration of Bones and Growth of Bone Tissue in the Test Tube (K voprosu o vozrozhdenii kosti v svyazi s virashtshivaniem in vitro kostnoi tkani) N A Dobrovolskaia
59 *Value of Ambard s Formula in Estimation of Kidney Functioning A M Zukoff
60 Quinin Hydriodid in Treatment of Cancer (Iodistii khinin—Chininum hydrojodicum—pri liechenii rakovikh novoobrazovaniy) G A Garnak

37 **Diagnosis of Incipient Spondylitis**—Turner examines the region of the spine by placing the entire hand flat on the suspected area and moving it along the spine The spinous process of the affected vertebrae can be felt then by the little finger as a slight prominence The abnormal prominence can be usually confirmed by the tenderness which can be elicited by pressure He found this method very useful and of decided value in a great many initial cases where the diagnosis was very difficult and doubtful

39 **War Wounds of the Tongue**—According to Nikolsky, gunshot wounds of the tongue have occurred only in the proportion of 0 2 per cent of all other wounds in war time The tongue wounds are accompanied by severe hemorrhages which may be fatal The hemorrhage can be checked sometimes only by ligation of the vessel in the wound, or at some distance Tamponing gives merely temporary relief, and is as a rule hard to carry out In deep wounds of the tongue the bleeding vessel can be found by enlarging the wound, when the vessel can be more readily ligated In case this does not succeed, the artery should be ligated at some distance on the neck in Pirogoff's triangle

42 **Cryptophthalmos**—Turovsky claims that his case of cryptophthalmos is the fourteenth described in the literature His patient was a 3-months-old infant The skin of the brow was almost continuous over both orbits The palpebral fissures were absent on both eyes The skin over the ocular region was thin easily folded, without any inflammatory phenomena A horizontal small furrow was present in the region corresponding to the palpebral fissure, but there was no trace of cartilages, lids or eyelashes Below the horizontal furrow the skin was somewhat protruding and covered a round tumor the size of an olive The brows were faintly developed No heredity could be established, the two other children are normal The operation did not reveal the presence of any cornea, though the tumor resembled an eyeball with a thin sclera through which the choroid could be seen Enucleation was refused and the incision was sewed together No attempt was made to operate on the other eye

49 **Neuralgia of Jacobson's Nerve**—The symptoms of neuralgia of Jacobson's nerve, the tympanic branch of the ninth cerebral nerve (glossopharyngeus) were paroxysmal attacks of acute shooting pains in the depth of the left ear, radiating into the pharynx lower half of the face and temporal region The pain was particularly severe in front of the ear, in the left temporal and anterior portion of the parietal region The teeth, eyes and forehead were normal During the attacks there was a bitter taste in the mouth, but no disorders of secretion of saliva Movements of the head or deglutition did not increase the pains Painful points were found in front of the ear, at the emerging point of the facial nerve and on the neck between the middle of the lower edge of the jaw and the inner border of the sternocleidomastoid Shtsherbak thinks that these symptoms confirm the connection of the ninth nerve with the auriculotemporal branch of the fifth nerve On the other hand his observation shows that the fibers of the ninth nerve, in human beings, do not conduct secretory impulses for the parotid glands as has been experimentally established for animals In the case reported treatment consisted in galvanization of the painful points, diathermia treatment of

the parotids, hypodermic injections of arsenic, supplemented by correction of retroversion of the uterus, parametritis and salpingo-oophoritis The patient was greatly improved

52 **Suppurating Wounds of Bones**—From the experiences with the wounded in a large Petrograd hospital, Krotkina draws the following conclusions Many gunshot fractures and lesions of the joints heal without any surgical interference In cases of inflammatory exudates in the joints, Bier's hyperemia treatment must be resorted to, followed if necessary by puncture of the joint Bier's treatment gives good results, even in pyemic states, provided the local process is limited to the joint When Bier's treatment is used on the knee joint, the popliteal fossa must be carefully guarded In case cellulitis sets in, the hyperemia treatment must be preceded by large incisions If continuous and persistent Bier treatment does not prevent or stop suppuration from the joint, the temperature keeping high, good results are often obtained from partial excision of the joint In case of malignant edema, the general condition being grave, the earliest possible amputation of the limb is indicated

53 **Typhus**—Zabolotny summarizes in brief form his conclusions from extensive experience with typhus The endemic occurrence of typhus fever is caused by the density of population and unhygienic mode of life The prodromal stage lasts about twelve days, and the disease starts with a violent rise of temperature up to 103 or 104 during the first twenty-four hours, and it falls by lysis In seventeen out of 100 patients with a typical clinical picture of typhus fever, there was marked agglutination reaction with typhoid bacilli In the plasma and the white blood cells of typhus patients there may be found small round bodies, sometimes in pairs In cultures from the blood there frequently can be found micro-organisms representing a complicating infection, and which may produce specific antibodies in the blood of patients

55 **Mixed Vaccination Against Typhoid and Cholera**—Bielousova found in her experiments on rabbits that with mixed vaccination the body's reaction was not more intense than with a separate or single vaccination In mixed immunization there is formation of antibodies against both typhoid and cholera Mixed vaccination ought to be done more frequently for practical reasons

58 **Regeneration of Bone Tissue**—Dobrovolskaia's experiments with proliferation of bone tissue in the test tube showed that it is possible to obtain an abundant growth in vitro, including the endostium, haversian canals, bone cells, etc The proliferation of osteogenous elements of the cortical substance of the transplanted bone deprived of periosteum gives rise to formation of osteogenous tissue, but this occurs with greater energy when the transplanted bone is not deprived of its periosteum The newly formed bone becomes solid only when it grows to blend with the basal bony tissue The proliferation and further growth of osteogenous elements are facilitated by the presence of a fibrinous blood clot The practical conclusion is to carefully guard the smallest fragments, in case of a fracture noncomplicated by suppuration, and in case of the latter, to remove them as late as possible in order to give the body a chance to utilize them as construction material

59 **Ambard's "Uremic Constant"**—According to Zukoff's studies, in cases of pronounced azotemia with high urea content in the blood (above 0 98 per thousand), the Ambard coefficient is high In less pronounced forms of azotemia there is no distinct parallelism between the coefficient and the amount of urea The rise of the coefficient indicates renal insufficiency even when the urea content in the blood is normal, and its figure corresponds with the gravity of the clinical symptoms In mild forms of nephritis or in the initial stages of severe nephritis, Ambard's method permits of determining the secretory function of the kidneys in regard to nitrogen before there is pronounced retention in the blood of nitrogenous substances, and when other methods of examining the renal function still give indefinite results The technic is quite simple and can be easily carried out not only on hospital but also on office or dispensary patients

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

June 17, I, No 25 pp 2237 2328

61 Development of Refraction of the Human Eye (De ontwikkeling der refractie van het menschelijk oog) W Koster
62 *The Importance of Statistics in Medicine (Het goede recht der geneeskundige statistiek) J A Korteweg
63 *Bradycardia With Pulsus Bigeminus P H Enthoven
64 Absorption of Roentgen Rays P M van der Haer and H Verploegh
65 Mechanism of Swallowing (Slikbeweging en slikgeruisch) L Kaiser

62 **Importance of Statistics in Medicine**—Korteweg declares that statistics in medical matters may be of the greatest aid to physicians as they are able to appreciate the attending circumstances But to the layman they are liable to prove confusing and misleading When there is a difference of opinion between physicians as to the importance to be ascribed to certain statistics, the verdict should be in favor of the man with the better medical training, wider experience and sound reasoning As an instance of the possibly misleading import of medical statistics he mentions the figures that apparently prove the heredity of cancer What is inherited, he says, is the tendency to long life, this brings the individual into the cancer age which others may not reach Korteweg reviews the experiences of the leading life and accident insurance company, with which he is connected, and cites numerous sets of statistics, discussing the conclusions to be drawn from them For example, in a certain district, up to 1906 there were twenty-two cases of industrial dislocation of the shoulder with favorable functional outcome, and seven with unfavorable outcome Since that date the figures have been respectively eighteen favorable and thirty-three unfavorable This led to a collective investigation which revealed that, in the attempt to improve matters, the parts had been immobilized longer in recent years, with disastrous results

63 **Bradycardia with Pulsus Bigeminus**—Enthoven describes two cases in which seemingly healthy young men presented extreme bradycardia with extrasystoles In the first case the electrocardiogram showed extremely irregular heart action, extrasystoles occurring without any regularity, sometimes alternating and sometimes arbitrarily between the normal groups Except for an attack of malaria six years before there were no pathologic antecedents Under the influence of bed rest the pulse became entirely regular, 36 beats to the minute, the sphygmogram showing continuous bigeminus Not the slightest influence was apparent from subcutaneous injection of 5 or 10 mg morphin, and 0 5 and 1 mg atropin caused no disturbance The electrocardiogram under atropin was like that under bed rest, unless possibly the pulse was a mere trifle accelerated No effect was evident either from digitalis by the mouth On the other hand, subcutaneous injection of 1 c c of 1 per 1,000 solution of epinephrin arrested the extrasystoles completely and brought the pulse rate up to 62 The sphygmogram seemed quite normal for an hour and a half, the epinephrin having thus transformed a pulsus bigeminus et rarus into a normal pulse of normal frequency If the bigeminus is due to vagotony, why was there no effect from atropin? Is there hypotony of the vagus? Or is the sympathetic system abnormally excitable? Be this as it may, Enthoven's conclusion in regard to the case is that the young man need not fear that the Damocles' sword of heart disease is hanging over his head, even although the extrasystoles and the bigeminus in the otherwise entirely healthy young man may entail extra work on the heart so that there is not enough reserve force to prevent his panting somewhat with extra physical exertion In the second case a man of 23 has an uneven and irregular pulse with bradycardia of 40 and irregular extrasystoles eliciting the pulsus bigeminus The thyroid is enlarged, the right lobe seems to be cystic, and there is a fine tremor Nothing pathologic can be discovered in the heart, and the thyroid is probably responsible for the extrasystoles, the cardiomotor center being thus rendered overexcitable and the automatism magnified until a spontaneous extrasystole occurs between the normal contractions of the heart The bradycardia thus induced is a manifestation not of depressed but of increased excitability of the heart

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ADENOMYOMA OF THE RECTOVAGINAL SEPTUM*

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BALTIMORE

In 1914, I referred[1] to two cases of adenomyoma of the rectovaginal septum recently reported by Cuthbert Lockyer,[2] and mentioned observations made by Macnaughton-Jones, Clifford White and Herbert Spencer I also briefly mentioned two cases that Dr D S D Jessup of New York had observed and which he was about to publish

Since then Jessup[3] has reported his cases in full I have reported another case[4] Stevens[5] reports five cases of adenomyoma that he observed in the course of eighteen months He also refers to a case which he had accurately described in 1910

Pierre Nadal,[6] of Bordeaux, reported a case of adenomyoma of the posterior vaginal wall in 1911 Other cases may have been recorded, but a careful survey of the literature in the *Index Medicus* for the last years failed to yield me more data on this subject

I shall briefly refer to two other cases that have come under my personal observation and shall then try to sketch the course of adenomyoma of the rectovaginal septum as evidenced by the cases thus far reported I shall also endeavor to indicate the appropriate methods of treating such tumors

Case 4—*Adenomyoma of the rectovaginal septum extending out to the right pelvic wall and constricting some of the pelvic nerves, hysterectomy, recovery*

Dec 28, 1914, Dr John Calvin Huckins of Ashland N H, wrote me as follows "In The Journal of the American Medical Association under date of March 14, 1914, I saw a report of a few cases of adenomyoma of the rectovaginal septum On May 10, 1913, I had a patient with a small tumor in the rectovaginal septum The mucous membrane of the right vaginal fornix had a bluish color and the mucosa was puckered High up in the right vaginal fornix a small hard mass could be felt Upon rectal examination, there was some bulging of the anterior rectal wall, and the mass could be made out more distinctly by a finger in the rectum What the mass was I do not know I had two surgeons in consultation, neither of whom knew what the growth was, or where it had originated Dr A H Harriman and I did an exploratory operation through the posterior vaginal wall and removed two thirds of the tumor, but we were of the opinion that it was malignant and did not complete the operation When I read your article ten months later, I then knew what this tumor must have been I took pains to keep track of this woman and for over a year I could not detect any lump upon digital examination Only a few days ago, on rectal examination, was I able to find a small lump which seemed to be nearly as large as the one found at the time of our exploratory operation (about the size of a small hen's egg)"

Under date of Dec 31 1914, Dr Huckins says "This case seems to me to be identical with Lockyer's Case 2, only not quite as marked I am of the opinion that the growth is connected with the uterus and broad ligament"

The patient, Mrs O P S, aged 43, was admitted to the Johns Hopkins Hospital, Jan 18, 1915 She had had no children Her chief complaint was pelvic pain The present illness had begun about three years before At that time she had been for a long ride in a buggy over a rough country road On her return home she had been taken with severe pain in the lower part of the pelvis and a feeling of pressure in the rectum These symptoms had persisted for a few days and then disappeared The following month, just after the menstrual flow had ceased, she had again experienced this peculiar grinding pain in the lower part of the pelvis It had lasted for four or five days and then suddenly had disappeared This pain had continued each month after the cessation of the menstrual flow The discomfort would last from four to five days and then until the following month she would be perfectly well She said that the character of these pains was unusual They were difficult to describe They were more like a dull aching or grinding which, although not severe, was very annoying and when present made her very nervous The pain was most severe at night and seemed more pronounced when she was on her feet It was usually localized in one spot, but at times would radiate down the right leg

The menstrual history was unimportant except for the fact that on two occasions during the past summer the flow had been profuse and prolonged to from eight to ten days The bowels had been somewhat constipated, there had been no pain on defecation, and no history of bloody stools at any time

On pelvic examination under anesthesia I found the uterus normal in size, slightly retroverted No thickening could be made out on either side

In the right vaginal vault and almost glued down to the lateral pelvic wall was a hard indurated mass, apparently about 3 cm long and 2 cm broad (Fig 1) It felt distinctly nodular, and reminded one somewhat of an adenomyoma I made a median incision and did a complete hysterectomy, but saved both tubes and ovaries On the left side I kept close to the cervix On the right side we dissected out the ureter and, after removal of the uterus, separated the rectum from the vagina for a distance of several centimeters and then cleared the right broad ligament The mass in question was about 3 cm long and densely adherent to the side of the rectum to the posterior vaginal wall, and also to the lateral

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[*] From the Gynecological Department of the Johns Hopkins Hospital and of the Johns Hopkins University

[*] Read before the Section on Obstetrics Gynecology and Abdominal Surgery, at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Cullen Thomas S Adenomyoma of the Rectovaginal Septum The Journal A M A March 14 1914 p 835

[2] Lockyer Cuthbert Proc Roy Soc Med 1913 vi No 4

[3] Jessup D S D Adenomyoma of the Rectovaginal Septum The Journal A M A Aug 1 1914 p 385

[4] Cullen T S Surg, Gynec. and Obst. March 1915 p 263

[5] Stevens T G Adenomyoma of the Rectovaginal Septum Proc. Roy Soc Med 1916 ix Obst and Gynec. Section p 1

[6] Nadal Pierre Bull de l Assn franç pour l etude du cancer 1911 iv, 338

Dr. Robert Kelly Library
[illegible] Medical College

wall of the pelvis It really had to be dug out When loosened, it was still found attached to the rectum It was removed The pelvic peritoneum was brought together, a cigaret drain was laid in the pelvis and carried out through the vagina The abdomen was closed The patient made a perfectly satisfactory recovery

Gyn -Path No 20828 Sections from the nodule show that it is composed of bundles of nonstriped muscle, of fibrous tissue, and of a moderate amount of adipose tissue Scattered throughout the tumor is uterine mucosa Sometimes glands can be seen lying in direct contact with the muscle At other points two or three glands are embedded in a characteristic stroma (Figure 2) Here and there is a slight tendency toward the formation of a miniature uterine cavity The glands are lined with one layer of cylindric epithelium The stroma is identical with that usually found surrounding the glands of the endometrium Here and there the stroma is rarefied At other points it shows a moderate degree of hemorrhage Scattered here and there throughout the tumor are brownish or yellowish-brown masses of pigment, the remains of old hemorrhage The outlying portions of the tumor are particularly instructive The adipose tissue of the broad ligament is being gradually replaced first of all by small round cells, the fat cells looking like vacuoles in a mass of small round cells In other places the tissue is in part or in its entirety replaced by connective tissue and here and there, as indicated in Figure 3, muscle and connective tissues are enveloping the nerves, thus in a measure accounting for the pain that the patient has had on the right side and which had extended down the right leg The tumor is an adenomyoma of the type usually found in the rectovaginal septum, and in parts cannot be differentiated from an adenomyoma of the uterine wall

Case 5 —*Adenomyoma of the rectovaginal septum*

Miss J, aged 38, was referred to me by Dr Alfred Whitehead, Jan 8, 1910 For several months she had been complaining of pain in the lower abdomen, chiefly in the region of the rectum For three months she had been growing weaker and for the last three weeks had been confined to bed Her periods were excessive

On pelvic examination I found, behind the uterus, a somewhat irregular mass, apparently 5 or 6 cm in diameter The thickening could be much more easily outlined through the rectum than through the vagina Her pain at the menstrual period was so severe that I advised her removal to the Johns Hopkins Hospital

Operation was performed Jan 10, 1910 On opening the abdomen I found a myoma, 1 cm in diameter, on the left side of the fundus This was removed The mass very low down behind the uterus seemed to be due to an inflammatory thickening between the cervix posteriorly and the rectum (Figure 4) The rectum at this point was drawn up and adherent to the back of the cervix After the cervix had been separated from the rectum, the area of thickening was found to extend backward and to implicate part of the left uterosacral ligament Although the surface of the rectum was thickened over an area 2 by 3 cm, the lumen of the bowel was in no way encroached on

To have removed satisfactorily the area of thickening in the rectum would have necessitated, as a preliminary, a complete hysterectomy This we were very anxious to avoid, as the patient was engaged, and hoped soon to be married As the growth in no way suggested cancer or tuberculosis, we laid a drain in the pelvis, bringing it out through the vagina in such a manner that it separated the raw area of the bowel from the raw area on the back of the cervix

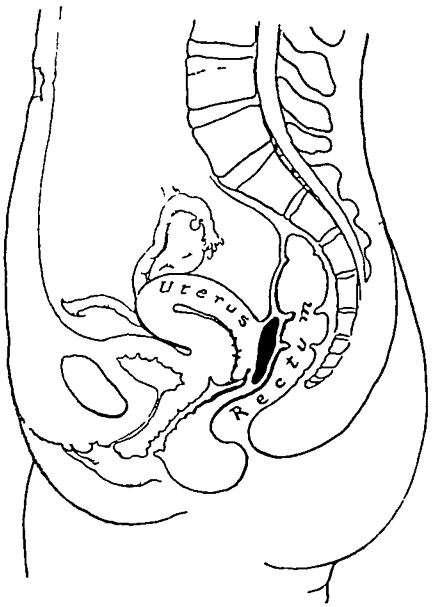

Fig 1 (Case 4) —Adenomyoma of the rectovaginal septum The black area posterior to the cervix indicates the location of the growth noted in Case 4 It had encroached on the right vaginal vault and at operation was found to have extended as far as the pelvic wall on the right To this it was densely adherent

The patient made a good recovery I saw her again at her home, Feb 28, 1910 At the menstrual period following her dismissal from the hospital she had terrific rectal pain This persisted, and I again examined her under anesthesia and found the supposed inflammatory thickening in the vaginal vault just as marked as before the abdominal operation I opened up the old drainage tract in the vaginal vault and found that the area of thickening in the bowel had folded over on itself After straightening out the fold I again drained through the vagina We thought the kinking of the rectum might possibly have caused the severe pain Complete removal of the uterus followed by removal of the rectal thickening was again considered but, on account of the contemplated marriage, it was thought wiser to continue palliative measures for a time at least During my absence, in the summer of 1910, she came under the care of Dr E H Richardson, and to him I am indebted for the further clinical notes on the case As her symptoms still persisted, in October, 1910, Dr Richardson dilated and curetted, removing a large amount of endometrium After this the patient improved for several months, although she was never free from menstrual pains, which were referred to the left hip and to the left iliac fossa She was practically an invalid for three weeks out of every month Nov 1, 1911, Dr Richardson did a supravaginal hysterectomy, releasing extensive pelvic adhesions, removing at the same time the left tube and ovary, and resecting the right ovary Enough of the uterus was left to allow the patient to menstruate Then the operator encountered dense pelvic adhesions The cervix was firmly fixed to the rectum, and a mass, several centimeters in diameter, was found at this point The patient's condition was such that resection of the rectum could not be undertaken Her convalescence was a stormy one and she was afterward kept on a rest cure for four weeks She improved markedly so far as her general condition was concerned, but from the first menstrual period after operation she complained of the same pain as before, it was, however less severe Finally, she again became an invalid for three weeks out of each month Her condition remained about the same

In July, 1912, the patient was suffering so intensely and so constantly that another thorough pelvic examination was made At this time there was a marked increase in the size of the "inflammatory mass" in the rectovaginal septum She was admitted to the Johns Hopkins Hospital Aug 7, 1912 At that time she was poorly nourished The abdomen was opened, and numerous omental adhesions were found everywhere After dissecting out the right ovary, the stump of the cervix was reached with a great deal of difficulty The rectum was now gradually dissected free and the "inflammatory mass" was exposed This, Dr Richardson tells me, was situated about 4 cm from the anus, it implicated the anterior surface of the bowel and extended out laterally The mass was about the size of a small hen's egg The portion of the rectum containing the tumor was resected and the bowel drawn down and attached to the anal margin The patient stood the early part of the operation very well, but near the close her pulse became almost imperceptible She did not rally and died ten hours later from surgical shock

Gyn -Path No 18756 Sections from the tumor show that it is composed of nonstriped muscle and fibrous tissue, with islands of uterine mucosa scattered freely throughout it (Figure 5) Some of these islands contain only one or two glands, in other sections there are eight or ten The glands occasionally lie in direct contact with the muscle, but nearly all of them are embedded in stroma The gland epithelium is thicker than usual and corresponds to the type that we speak of as hyperplasia, being two or three times the normal thickness The stroma surrounding the glands is also exceptionally abundant A good many of the glands are dilated and some are evidently cystic Even in the dilated glands the epithelium is much thicker than usual The picture is that of a typical adenomyoma The glands in the myoma encroach more on the rectal wall than usual (Figure 6)

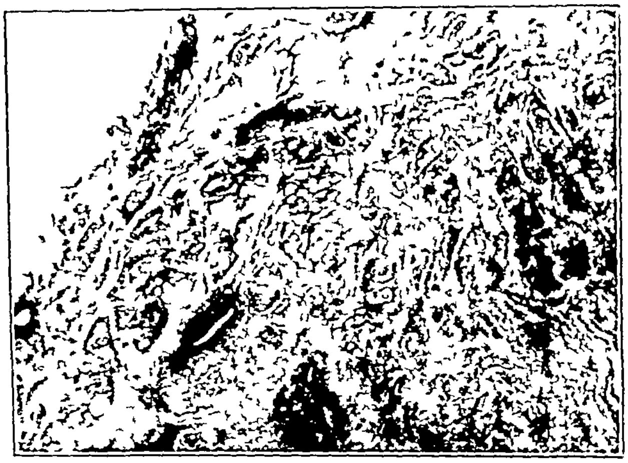

Fig 2 (Case 4) —Adenomyoma of the rectovaginal septum In this case the growth had invaded the right broad ligament and extended out to the pelvic wall so that it was necessary literally to dig the growth away from the side of the pelvis In the lower part of the section two or three glands are seen The dark areas surrounding them are the characteristic stroma of the uterine mucosa In the left portion of the section it will be noted that the adipose tissue is being replaced by fibrous tissue and muscle. The condition was diagnosed clinically by Dr Huckins the family physician

In a few places they have penetrated the muscle and at one point at least they have broken through the muscle and lie in direct contact with the rectal glands (Figure 7) One gland is seen projecting down nearly half way through the rectal mucosa Such an intimate blending of uterine mucosa with rectal mucous membrane I have never seen before To have shelled this growth out or to have cut it away without removing a segment of the rectum would have been an utter impossibility

DESCRIPTION OF ADENOMYOMAS OF THE RECTOVAGINAL SEPTUM

Myomas occurring in the septum between the vagina and the rectum have long been known, and some of them have reached such a size that they encroach markedly both on the vagina and on the rectum In the male, so-called rectal myomas have been noted In one case the tumor was as large as a coconut and at first was thought to be an inoperable malignant growth The short but comprehensive article on the subject by F Descoeudres[7] is well worth a thorough study

From the cases of adenomyoma of the rectovaginal septum that I have been able to collect, the following tentative classification may be made

1 Small adenomyomas lying relatively free in the rectovaginal septum (Cullen's Case, 1, Stevens' Case 1, Stevens' Case 5, Nadal's case)

2 Adenomyomas adherent to the posterior surface of the cervix and at the same time to the anterior surface of the rectum (Lockyer's Case 2, Cullen's Case 3, Stevens' Cases 2, 3, 4 and 6, Jessup's Cases 1 and 2)

3 Adenomyomas gluing the cervix and rectum together and spreading out into one or both broad ligaments (Cullen's Case 4, Cullen's and Richardson's Case 5)

4 Adenomyomas involving the posterior surface of the cervix, the rectum and broad ligaments, and forming a dense pelvic mass that cannot be liberated (Cullen's Case 2)

Of course, one group merges imperceptibly into another, and a case which today belongs to Group 1 may in a few years belong to Group 2 or to Group 3

On vaginal examination one can detect a definite thickening This may be situated in the posterior wall to the right or left of the cervix, but is usually directly behind it It may vary from 1 to 3 or 4 cm in breadth The thickening is occasionally nodular As a rule, however, it is diffuse, hard, and reminds one of dense inflammatory tissue or of a small adherent myoma In some cases the nodule moves with the cervix, as if the two made up a single piece In other cases the nodule also seems firmly fixed to the rectum

In a few cases the vaginal mucosa over the nodule has been puckered and is of a bluish tinge This was noted in Lockyer's Case 2, and in my Case 4 In Stevens' Case 2 the overlying vaginal mucosa was also puckered The puckering is due to the tumor becoming adherent to the vaginal mucosa

In those cases in which the growth has invaded all parts of the pelvic floor, one finds induration throughout the vaginal vault There may also be a slightly cystic feel on bimanual examination, if some of the glands or a miniature uterine cavity in the tumor have filled up with blood This was observed in my Case 2

On rectal examination, these tumors, if situated directly behind the cervix, can often be more clearly felt than through the vagina If the growth be adherent to the rectum, the bowel over this area is splinted and hard, and does not yield The rectal mucosa, however, even over the growth, is, as a rule, perfectly normal, although the tumor may project slightly into the lumen of the bowel In my Case 3 the growth had partly encircled the bowel and had produced a considerable degree of narrowing of the lumen In Jessup's Case 2 the patient had had hemorrhoids for thirteen years, and in my Case 1, in which a discrete myoma, 4 cm in diameter, was encroaching on the lumen of the bowel, the rectal mucosa at this point showed several small polypi projecting from it These Dr Samuel T Earle removed prior to my doing the hysterectomy

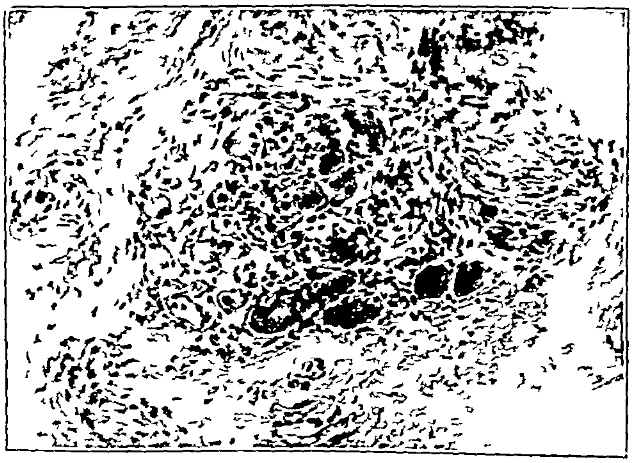

Fig 3 (Case 4) —Muscular and fibrous tissue in an adenomyoma of the broad ligament encircling and compressing nerves This section is from the right broad ligament It shows the diffuse myomatous and fibrous tissue surrounding nerves There were definite symptoms of nerve pressure

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[7] Descoeudres F Des myomes du rectum Rev de gynec et de chir abd 1910 xiv 3

HISTOLOGIC APPEARANCES

These growths, whether large or small, discrete or diffuse, consist of nonstriped muscle and fibrous tissue, and have scattered throughout them typical uterine glands These glands may occur singly and lie in direct contact with the muscle, or may be found in groups As a rule, they are separated from the muscle or fibrous tissue by the characteristic stroma of the uterine mucosa, and at many points one can see islands of stroma devoid of glands In some of the glands fresh blood may be found More frequently, yellowish-brown pigment is noted in clumps scattered throughout the stroma This pigment is the remnant of old bleeding

Along the advancing margin of the diffuse growth, the manner in which the growth extends can sometimes be very clearly followed This was well shown in my Case 4 (Fig 2) Here the young connective tissue cells and the muscle fibers gradually replace the adipose tissue of the broad ligament, and finally engulf it completely They encircle nerves and gradually compress them, thus adding to the discomfort of the patient

The most widespread growth that I know of was found in my Case 2 In this case a hysterectomy had been performed in San Francisco two years before When I saw the patient, the lower portion of the pelvis was filled with an adenomyomatous growth The mass in the left side proved to be a miniature uterine cavity filled with chocolate colored fluid — the residue of the retained menstrual flow

Histologically these growths are identical with adenomyomas of the uterus

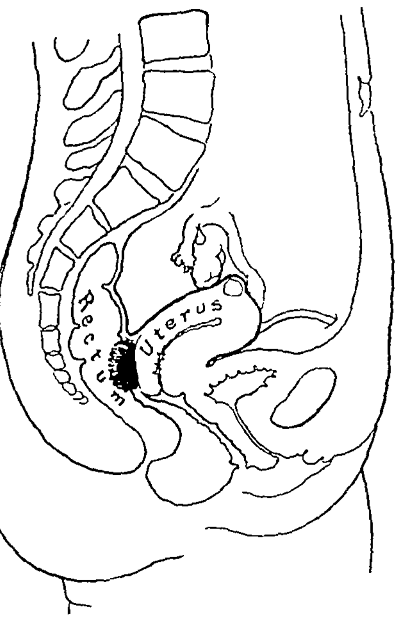

Fig 4 (Case 5) — Adenomyoma of the rectovaginal septum The black area between the cervix and rectum indicates the location and approximate size of the supposed inflammatory thickening noted at operation in Case 5 A reference to the description *of the specimen* shows that the mass was a typical adenomyoma In the fundus of the uterus was a small myoma

SYMPTOMS

Age Incidence —The ages were as follows, 25, 30, 32, 35, 37, 37, 38, 41, 41, 41, 42, 43 and 53 The 53 year old patient still menstruated slightly She told me that members of her family did not reach the menopause until somewhat late, and that her great uncle was born when his mother was 54 All of the cases occurred among women who were still menstruating

Menstruation —The most pronounced symptom was profuse menstruation In some this was painless, in others accompanied by great discomfort My patient, in Case 2, was almost exsanguinated, although a supravaginal hysterectomy had been done for removal of a myoma two years before In my Case 3 the patient had insufferable pain for two days before and after each period In my Case 4, in which we found the adenomyoma gripping small pelvic nerves on the right side, it also extended to the right hip Partial removal of the growth relieved her of these pains for from six to eight months In my Case 5 the pain at the period was very severe, and the patient was finally incapacitated for three out of the four weeks

Rectal pain was also a prominent feature in some cases In Lockyer's Case 2 there was great pain in the rectum, and defecation was difficult The patient said that something prevented the bowel from moving The discomfort was more severe at night In my Case 3, the patient had had for the last two months six bowel movements daily The discomfort was so severe that she insisted on having something done It was in this case that we found much narrowing of the lumen of the bowel In my Case 4 the woman was slightly constipated Before her first operation defecation had been invariably accompanied by pain In my Case 5 there was pain in the lower abdomen, chiefly in the rectum

When the growth is small, is not adherent to the rectum and has not spread out into the broad ligament so that it has commenced to exert pressure, we shall expect few if any symptoms In those cases, however, in which the adenomyoma has become adherent to the rectum, there is a tendency to pain in the rectum, with or without painful defecation

When the growth has invaded the broad ligament and encroached on the nerves, we may expect discomfort referable to this region, due in the first place to the pressure on the nerves, and in the second place to the swelling of the tumor at the menstrual period Profuse periods seem to be the rule

CAUSE OF ADENOMYOMA OF THE RECTOVAGINAL SEPTUM

Our knowledge of the distribution of adenomyoma is becoming more stable each year Adenomyomas of the uterus, formerly thought to be rare, are relatively common[8] The source of origin of their glands is also clear, namely, from the uterine mucosa We know that adenomyomas may be found in the round ligament,[9] in small umbilical tumors,[10] in the utero-ovarian ligament,[11] and recently one has been described as occurring in the broad ligament over the left ureter[12] My colleague, Dr William W Russell,[13] has found uterine mucosa in the hilum of the ovary

When discussing cervical adenomyomas, in my work on "Adenomyoma of the Uterus," several years ago, I pictured an island of perfectly normal mucosa of the body of the uterus situated near the outer surface of the cervix[14]

Subsequent studies may possibly show that this is no great rarity If so, this growth might readily become the starting point for those adenomyomas found in the rectovaginal septum

Kronig, Hartz and Breus have reported cases that may be of interest in this connection

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[8] Cullen, Thomas S Adenomyoma of the Uterus, Philadelphia W B Saunders Company, 1908

[9] Cullen Thomas S Adenomyoma of the *Round* Ligament, Johns Hopkins Hospital Bull, May and June, 1896

[10] Cullen, Thomas S Diseases of the Umbilicus, Philadelphia W B Saunders Company, 1916 p 373

[11] Cullen, Thomas S Adenomyoma of the Uterus, Figure 41 p *142*

[12] Stickney, G L A Case of Diffuse Adenomyoma of the Uter with Discrete Adenomyoma over the Left Ureter Johns Hopkins Hospital Bull, 1915, xxvi, 304

[13] Russell, William W Aberrant Portions of the Mullerian D Found in an Ovary, Johns Hopkins Hosp Bull, 1899 x 8

[14] Cullen, *Thomas* S Adenomyoma of *the* Uterus, Figure 49 p 1

Kronig[15] reports a very interesting instance of a cystic adenomyoma springing from the posterior wall of the uterus and extending backward beneath the peritoneum of Douglas' pouch It consisted of one large thin-walled cyst containing a liter of brownish-red fluid, and of a more solid portion consisting of about thirty small spaces so arranged that they resembled a honeycomb The walls of the large cyst, especially of that portion lying free in the abdominal cavity, were very thin, in places measuring scarcely more than 1 mm The cyst walls were composed of fibrous tissue and of a varying amount of muscle The inner surface was in places lined with cylindric ciliated epithelium The more solid portion of the tumor was a typical cystic adenomyoma, which, as Kronig says, in the form and arrangement of glands and in the cystic spaces, corresponded in practically all points with the adenomyomas of von Recklinghausen There were definite groups of glands surrounded by the characteristic stroma Kronig thinks that the tumor originated in the uterine wall and was later pushed out into the connective tissue of Douglas' pouch

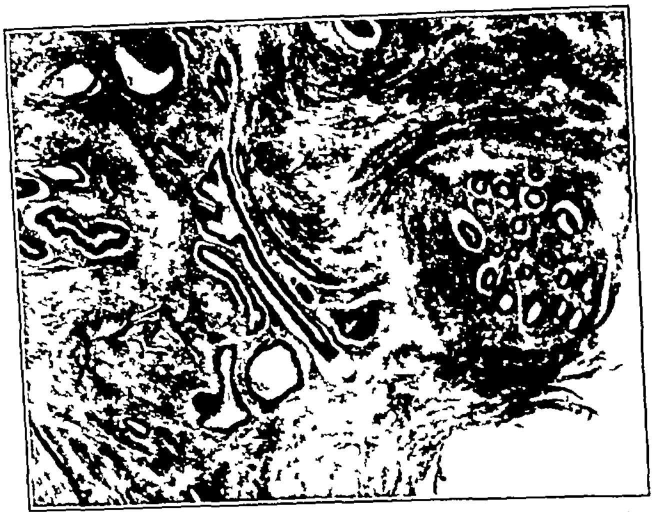

Fig 5 (Case 5) —Adenomyoma of the rectovaginal septum The matrix of the tumor consists of nonstriped muscle and of fibrous tissue The round colony of glands on the right is composed of typical uterine glands They are surrounded by the characteristic stroma of the mucosa The large glands in the center and also those on the left have a thicker epithelium than usual They look exactly like those noted in hyperplasia of the endometrium They also are partially embedded in stroma similar to that of the endometrium (Photomicrograph by Herman Schapiro)

Hartz[16] observed a similar case in Sanger's clinic

In Breus'[17] Case 2 the patient was 51 years of age There was a tumor, the size of a child's head, springing from the posterior surface of the uterus and covered by the peritoneum of Douglas' sac and the left broad ligament The tumor, on its upper and posterior surface, was hard On section it was seen to be composed of myomatous tissue, but the central portion contained several cavities These varied from a pea to an apple in size, and were in part separated from one another by thick partitions Several of them, however, communicated with one another The cysts had smooth inner surfaces and were filled with a thick chocolate-brown fluid The largest cyst communicated directly with the uterine cavity by a funnel-shaped opening just above the internal os The cysts were lined with cylindric ciliated epithelium, and, where the large cyst communicated with the uterine cavity, the surface epithelium of the uterine mucosa was directly continuous with that of the cyst Breus considered the tumor is a subperitoneal and intraligamentary cystic myoma of the uterus

The glands in the adenomyomas of the rectovaginal septum look like, and act exactly like, those of the mucosa of the body of the uterus, and they undoubtedly arise from uterine glands or from remnants of Muller's duct

DIFFERENTIAL DIAGNOSIS

As pointed out by Jessup, in both of his cases, in which the patients were operated on by Dr William S Bainbridge, other surgeons had diagnosed the growths as inoperable cancer That was permissible in the past, but will not be in the future These growths occur in women, are noted in the childbearing period, are usually situated directly behind the cervix and, as a rule, are firmly adherent to the rectum The symptoms are excessive and painful periods, accompanied in severe cases by much rectal pain On rectal examination the growth is found literally plastered to the anterior surface of the bowel The rectal wall is fixed at that point, but its mucosa is intact, and is normal, or merely shows a few hemorrhoids or possibly a polyp I know of nothing in pelvic or rectal surgery that should be confounded with this condition in future

TREATMENT

Some might argue that simple removal of the appendages would cause atrophy of the uterine mucosa contained in the adenomyomas of the rectovaginal septum My Case 2 is a sufficient answer Although a supravaginal hysterectomy had been performed two years before for a myomatous uterus, the pelvic condition had grown steadily worse

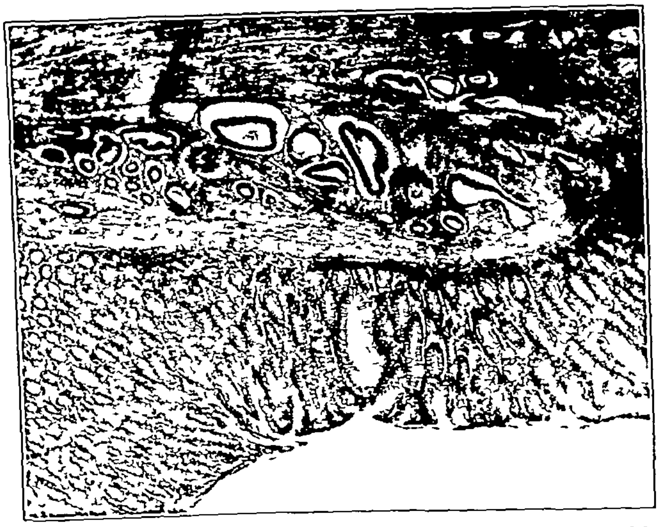

Fig 6 (Case 5) —Adenomyoma of the rectovaginal septum The rectal mucosa is normal Some of the glands of the adenomyoma are small and round others are large The large glands have a thickened epithelium and correspond to the characteristic picture noted in hyperplasia of the endometrium Nearly all of the glands are surrounded by the characteristic stroma of the uterine mucosa At the right limit of the section one of the uterine glands is lying in direct contact with the rectal mucosa (Photomicrograph by Herman Schapiro)

1 Where small discrete nodules exist in the posterior vaginal vault, these may be readily removed

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[15] Kronig B Ein retroperitoneal gelegenes voluminoses Polycystom entstanden aus Resten des Wolff schen Korpers Beitr z. Geburtsh u Gynak 1901 iv 61

[16] Hartz A Neuere Arbeiten uber die mesonephrischen Geschwülste Monatsschr f Geburtsh u Gynak, viii

[17] Breus Carl Ueber wahre epithelführende Cystenbildung in Uterusmyomen Leipzig 1894

through a vaginal incision, as was so successfully done by Stevens

2 Where the growth occupies the posterior surface of the cervix and extends laterally, after the ureters have been dissected out carefully, a complete abdominal hysterectomy should be performed

3 If the growth be firmly adherent to the rectum, a wedge of the rectum should be removed, together with the uterus It has been found best, after freeing the uterus on all sides, to open up the vagina anteriorly and laterally The uterus and the rectum can then be lifted farther out of the pelvis, thus facilitating the removal of the necessary wedge of the anterior rectal wall The uterus really acts as a handle, and the necessary rectal tissue and the uterus are removed as one piece

4 Where the lumen of the bowel is greatly narrowed, a complete segment of the rectum should be removed with the uterus, and an anastomosis should be made

5 In desperate cases, where everything in the pelvis is glued together, as in my Case 2, an ideal operation is out of the question The patient will not stand a long operation, and, if she could, a satisfactory result could not be obtained In such a case it would be better to cut across the sigmoid, invert the lower end, close it, and bring the upper end out through the abdominal wall of the left iliac fossa, making a permanent colostomy When the patient has to some extent regained her strength, the uterus, the lower portion of the rectum and the broad ligament tissue can be shelled out as one piece

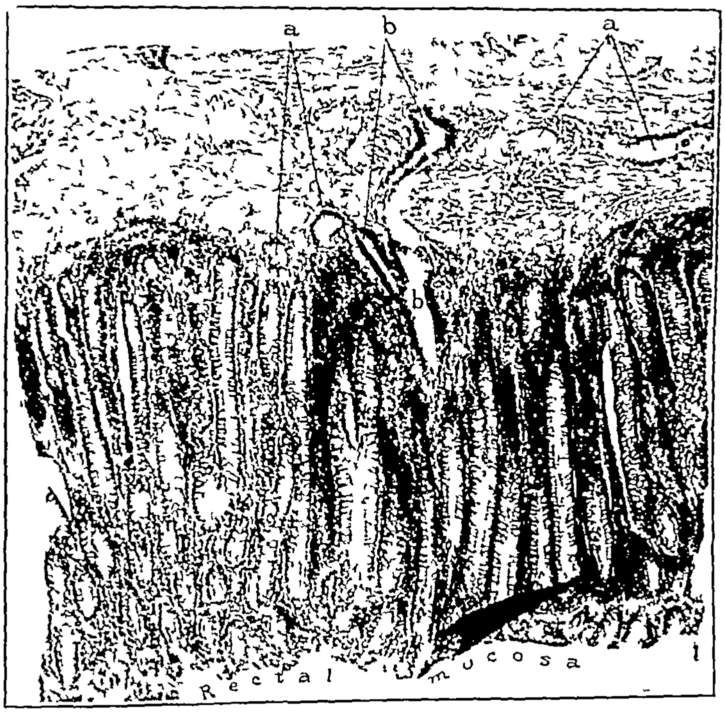

Fig 7 (Case 5)—Glands of adenomyoma of the rectovaginal septum penetrating the rectal mucosa The rectal mucosa looks normal In the underlying muscle are a few uterine glands (*a*) lying in direct contact with the muscle At *b* is a uterine gland extending down into the rectal mucosa The continuity of this gland could be followed in other sections This is the only instance known to us in which the glands of an adenomyoma have actually invaded the rectal mucosa (Photomicrograph by Herman Schapiro)

These growths, while histologically not malignant, remind one of glue Unless they are completely removed, further trouble is liable to occur

The fact that Stevens has observed five cases of adenomyoma in eighteen months, and that I have had five cases in my own practice, leads me to believe that adenomyoma of the rectovaginal septum is no great rarity and that the literature of the near future will contain records of many such cases

20 East Eager Street

ABSTRACT OF DISCUSSION

Dr Carey Culbertson, Chicago At first thought one might be led to surmise that adenomyoma of the rectovaginal septum is a pathologic entity so rare as to be of little value But when we realize that Cuthbert Lochyer's first case was reported as recently as 1913 and that already we have these five cases of Dr Cullen's with the six additional ones of Stevens', it can only mean that in all clinics of any considerable size these cases have been overlooked In addition to his own cases, the first of which by the way Stevens claims he reported as far back as 1909, cases have been described in England by Spencer, Lietch, Gough and Stewart and Bland Sutton A Mayer last November reported five cases of a peculiar tumor-forming inflammatory process in the tissues between the rectum and vagina which he places in the same category as R Meyer's "posterior paravaginitis and parametritis with proliferation of epithelium," described in 1908 Aman recently described a case which he calls "retrocervical fibro-adenomatous serositis" and refers to five others, accepting Meyer's pathologic explanation and conclusions An interesting point in the pathology of growths is that, with the exception of two of Stevens' cases, all were associated with inflammatory processes, the uterus usually being retroverted and densely adherent This suggests at once the similar condition in the tubes, called by Robinowitz "adenomyo salpingitis," but which has also been regarded as a true neoplasm It is not so difficult to understand how inflammatory pressure might produce such a squeezing out of the mucosa into the wall of the tube, but in the case of the rectovaginal septum or postcervical space, the distance from the uterine cavity is too great to admit of the presence here of typical uterine mucosa as the result of inflammatory pressure Lack of time prevented Dr Cullen from expressing his opinion as to the origin of these growths—whether he regards them as due to inflammatory pressure on the uterus, which seems to be the German idea, or as true neoplasms originating from embryonic rests persisting from the fusion of the mullerian ducts

Dr Thomas S Cullen, Baltimore I have had in all five cases of adenomyoma of the rectovaginal septum When the first case came under my care I was ignorant of the fact that such a condition as adenomyoma of the rectovaginal septum ever existed, and it was only within the last five weeks, when looking over old specimens, that we found out the exact nature of the case In our cases of adenomyoma of the rectovaginal septum there has been no indication whatever of inflammation, that is, of the pouring out of small round cells or polymorphonuclear leukocytes There is, however, an inherent tendency for the mucosa and for the nonstriped muscle and connective tissue to spread out and invade surrounding structures The glands in these cases undoubtedly originate from the uterine mucosa or from remains of Muller's duct I feel confident that within the next few months more cases of adenomyoma of the rectovaginal septum will be reported

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Tapeworm in Portugal—The *Medicina Contemporanea* states that the eggs of the *Hymenolepis nana*, the smallest tapeworm known, were found in thirty-three of 503 children at Lisbon whose stools were examined From one to several hundred ova were found, and in nineteen cases they were associated with other helminths' ova This is a proportion of 6 5 per cent , Grassi found this parasite in the stools of 10 per cent of the children in southern Italy that were examined, and it seems to be prevalent in Belgian miners and in Italian immigrants in Brazil In the Lisbon cases there did not seem to be any special symptoms from the presence of the parasite

PETER PARKER, THE FOUNDER OF MODERN MEDICAL MISSIONS

A UNIQUE COLLECTION OF PAINTINGS*

C J BARTLETT MD
Professor of Pathology Yale University School of Medicine
NEW HAVEN, CONN

A few months ago occurred the laying of the corner stone of the hospital for the Yale Medical School in Changsha, China, a city of 300,000 in a province (Hunan) of 20,000,000 inhabitants It is said that this will be the finest building of its kind in interior China This notable work, now being done in China by Dr Hume and Dr Yen and their associates, is such a natural outgrowth of that begun there by another Yale man about eighty years ago that I have ventured to describe briefly the work of this earlier physician of the last century His name was Peter Parker, and to him belongs the distinction of being the founder of modern medical missions Fortunately there is an excellent biography of Dr Parker, written by the Rev George B Stevens, DD, "The Life, Letters and Journals of the Rev and Honorable Peter Parker, MD, Missionary, Physician and Diplomatist, the Father of Medical Missions and Founder of the Ophthalmic Hospital in Canton" The language of this title may seem extravagant, as that of the clergy is apt to be when speaking of matters medical A study of the many things which Dr Parker accomplished in various lines, however, convinces me that the entire title is fully deserved

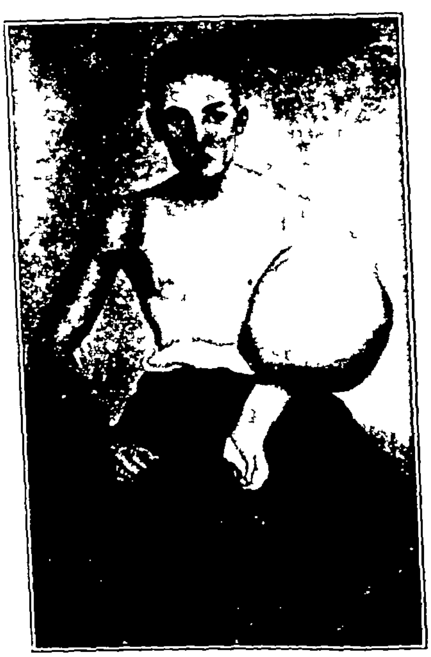

Fig 2—See case report No 2

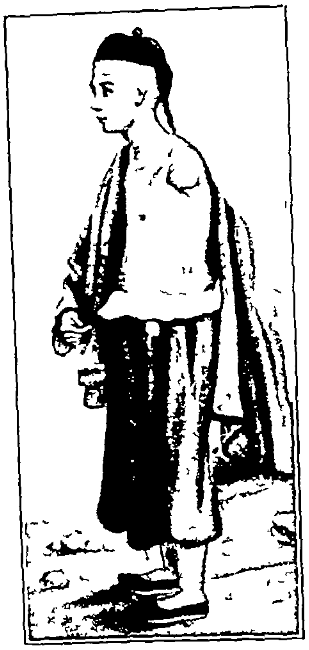

Fig 3—See case report No 2

He was born in Framingham, Mass, June 8, 1804 From his boyhood on one is impressed by his intensely religious nature and his desire to exert an influence on others His education was delayed because of the poverty of his home, and it was only in his twenty-second year, after making suitable arrangements for the care of his parents, that he was able to start out for a more liberal education At 23 he entered Amherst College, where he remained three years He evidently thought seriously of completing his college course at Harvard, but was advised by his ministerial friends that it was not desirable for pious students to go there at that time He then decided to enter Yale for his senior year One is impressed with the enormous amount of extracurriculum work, chiefly of a religious nature, which he carried that year How early he decided to study medicine does not appear, although he evidently intended from his youth to go into the mission field However, it is interesting to note what an excellent foundation for his medical studies was provided in this required course in the senior year in college Of it he says

> By anatomy I have been made acquainted with my own material system, the framework, the union of the several parts and their requisite functions, whilst Locke, Stewart and Brown have rendered me acquainted with the mind, its occupant and the mental powers and operations Geology has made me acquainted with the awful history of my birthplace, chemistry with the constitution of the various elements, botany with the names and physiology of all the individuals of the vegetable kingdom which extends over no small portion of its surface, astronomy leads to an acquaintance, or contemplation at least, of the whole universe Natural theology has pointed me to the proofs of an all-designing and infinite mind, and to complete the climax, the descent of the Holy Spirit has wonderfully displayed the riches of redeeming grace[1]

He graduated from the college in 1831 In the following year, we find him as a student both in the divinity school and in the medical school at Yale

His routine work at that time is outlined in a letter to his mother and sister, dated Nov 25, 1831

> You will better understand what I mean by unprecedented pressure of duties, if I enumerate some of them I arise at half-past five in the morning, and attend prayers in the Seminary From this until breakfast, at half-past six study Hebrew or Greek From eight to ten, again study Hebrew or Greek From ten to eleven, attend Dr Ives' lecture on the theory and practice of medicine From eleven to twelve I am engaged in Miss Hotchkiss' school From twelve to one, attend Dr Knight's lecture on anatomy From two to three p m, a recitation to Professor Gibbs in Hebrew or Greek From three to four I have a class in chemistry, or Paley's Theology, then one hour for exercises, and the remainder of the day for study and attending meetings This is a fair outline of every day's employment, so you will not regard it as altogether strange that I have not written you before

Some of the examples of the manner in which he combined medical and religious work at this time are interesting A woman had been murdered and her husband was suspected of the crime As a medical student, Parker attended the necropsy on the body of the murdered woman, and then in his other field of labor hastened to the jail to pray with the wretched husband

During the great epidemic of cholera in the summer and fall of 1832, he had an unusual opportunity as a medical student to do practical work among the poorer classes After completing his courses in the divinity school and in the medical school and being publicly dedicated as a missionary to China at a great public meeting at the Bleeker Street Presbyterian Church in New York, he sailed for China, June 4, 1834 Early in life he formed the habit of keeping a journal or diary, and he had also developed to a large degree the old New England custom of introspection or self examination As a result his journals frequently give us not only an account of his work but also his own estimate of himself and of his successes or failures When only a week out from New York on his first trip to China, we find recorded this estimate of his undertaking, "I am among those who stand upon the pinnacle of the world, a spectacle to millions, both of the friends and enemies of Christ," and repeatedly there is found in his journals good evidence that he had no mean estimate of himself and his life work After a voyage of 140 days he arrived in China Without waiting to acquire any very extended knowledge of the language, he at once began the practice of medicine together with other missionary work Thus in the following February he records, "It is now four o'clock in the afternoon In the morning as usual attended the sick, at ten in the morning held divine service with about twenty-six Chinese, at the close of which I again attended the sick" Also, "As it respects my intercourse with the Chinese, and my medical and surgical practice among them it far excels all of which I ever thought" The time appeared to be ripe for this work, for while he was the forerunner of medical missionaries in that country, individual physicians in small numbers, particularly from England, had preceded him Vaccination had already been introduced into China Parker's first field was at Singapore, and as he plunged into his medical work with great zest we find him sorely distressed at his "declining spirituality," a condition in which perhaps he is not unique among medical men

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* Owing to lack of space this article has been abbreviated in The Journal by the omission of several case reports and illustrations The complete article will appear in the reprints a copy of which can be obtained of the author on request

[1] Stevens G B Life of Peter Parker p 49

[2] Stevens G B Life of Peter Parker p 57

Fig 5 —See case report No 4

The great work of Dr Parker's medical life began with the opening of the Ophthalmic Hospital in Canton in November, 1835, as a missionary hospital As the name implies, this hospital was intended primarily for diseases of the eye, which were very prevalent in China, but the great abundance of general surgical material made it necessary to receive surgical cases into the hospital, and Dr Parker's reports have to do chiefly with the latter cases The hospital appears to have become quickly popular, for about the middle of 1837, men from distant provinces and from every rank flocked there

At the Yale University School of Medicine, there is a collection of between eighty and ninety oil paintings illustrating surgical conditions as Dr Parker found them in that country These paintings were the work of a Chinese artist, and many of them are in excellent condition They were particularly prized by the late Dr Moses C White, for many years professor of pathology in the Yale medical school and himself at one time a medical missionary in China It is in searching through the Chinese Repository for the reports of this ophthalmic hospital at Canton and for the descriptions in these reports of the cases corresponding to the serial numbers of these paintings, that I have become interested in the work of its founder From the first, he appreciated the necessity of training Chinese youths for medical service, and in his reports are occasional references to these students In 1840, on account of the opium war between England and China, his work was interrupted and he returned to America, and in the winter of 1841 again attended medical lectures in New Haven and at the University of Pennsylvania Up to this time, there had already been about 8,000 patients treated at the hospital in Canton He did not return to China until the fall of 1842 During his stay in America, his main endeavor was to arouse interest in the affairs of China not only among those who cared for missions but also among government officials On his second Sunday in Washington he preached in the Hall of Representatives to the members of the Senate and House of Representatives, an audience to which he refers as being one of the most enlightened of any age or nation At this time Daniel Webster was about to become secretary of state, and the interest which Parker was able to arouse in him regarding the affairs in China was an important factor in the early establishment of diplomatic relations between that country and America He was requested by Webster to submit in writing his views regarding the crisis then existing between America and China and the steps which should be taken by this country in the situation Parker did as requested, and the value placed on his statement is indicated by a very significant circumstance When the first commissioner was sent by the United States to China a few years later (1843), he had been provided with a copy of Parker's letter in full

Parker also took a trip to England and France in the interest of his cause He married in Washington a Miss Harriet Webster, a connection of Daniel Webster and of Rufus Choate The only description which I have found of his personal appearance was written at this time According to this he was a young man, tall and fine looking, a perfect blond As a part result of his trip to America and Europe, he arranged for the sending out of additional physicians and surgeons to China, and still more important for the future of China, he perfected plans both in England and America for the education of Chinese students for medical work The influence which he had already exerted in China was indicated by a letter written in 1841, by S Wells Williams, who himself spent many years in China, becoming an authority on matters pertaining to that country and, in his later years, professor of Chinese in Yale Mr Williams wrote that no foreigner was so extensively known among the Chinese as Parker, the conductor of the hospital at Canton, that his gratuitous treatment of disease among the Chinese had done much to place foreign character on a better footing there, and to show them that we are not exactly the ‘devils" they took us for

He reached Canton on his return in November, 1842 Mrs Parker was the first foreign woman to reside in that city Parker at once took up his medical work He writes, ‘I have more work than any one mortal can perform Never were my medical services sought with more avidity than now Officers of high distinction seek them, and crowds of all classes " And in June, 1843, he records, Arose at six o'clock this morning have admitted two hundred patients at the hospital " And from Nov 21, 1842, to Dec 31, 1843, there were 3,501 patients admitted to the hospital

As the interest of medical men is chiefly in his professional work, I will quote from some of his reported cases and show a few of the paintings referred to While diseases of the eye appear to have been most numerous, and he speaks of couching eight patients in one afternoon, yet the major part of his reports have to do with surgical cases I shall quote only one or two of these case reports in full and give brief notes of others, as many of them are too long to give entire It is to be remembered that these reports were made to a group of nonmedical persons for publication in a nonmedical work

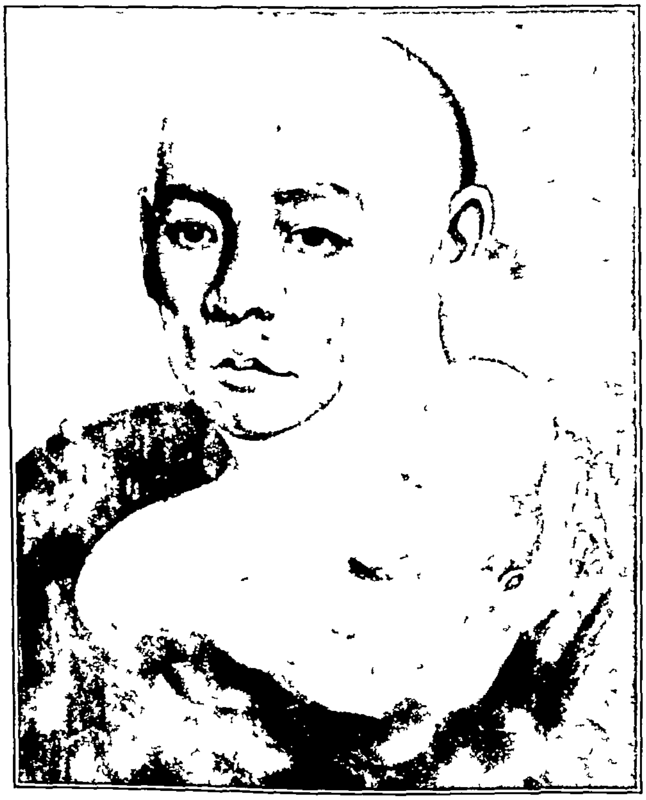

Fig 6—See case report No 5

REPORT OF CASES

Case 1 (No 30621[3]) —*Fungoid tumor*—Feb 26 1849, Chushu a Manchu aged 54 had a fungoid tumor of the size of an orange situated on the back near the right scapula and spine The tumor was readily and successfully removed Before leaving the hospital the patient made repeated solicitations to be allowed to send an artist and take the portrait of the surgeon his importunity was at length acceded to and a portrait taken in water colors, by the side of which on the same canvass was the following inscription in poetry, and an account of his case, and what he had seen in the hospital

What man is that? America's noble and disinterested man who does to others as he would that others should do to him His country is different from ours, his feelings are the same In all distresses and diseases, he feels the sorrows and joys of others as though they were his own Those cases which require the use of instruments, and which are difficult to others are easy to him He cherishes a mind that is divine and bears the visage of Buddha, a full halo of glory surrounds his deeds, and he deserves immeasurable longevity Parker's meritorious virtues are innumerable as the sands of the ever-flowing river I denominate him a *Yé—su* What say you yes or no?"

In addition to the poetry, he next proceeds to give the following statement

"In the second month of the year of the cycle *ki-yu* (1849), I had a tumor on my back in an ulcerated state, I was also afflicted with a hemorrhoidal affection, to which the (Chinese) physicians with difficulty applied their hands, when I went to Dr Parker for treatment and was healed with speed divine Moreover, I have in person seen him heal other men and although their maladies were such as would baffle Lu I and Pien Tsioh[4] there were none with which he did not succeed Furthermore, possessing the influence of the example bequeathed him in Jesus he delights in doing good, never tiring and loves other men as himself I have therefore taken this his portrait, and respectfully composed a few verses in order to keep in memory my constant sense of gratitude, as I stand before it I remember him with respect and esteem With the utmost sincerity, respectfully composed by Chushu, styled Tsingtien '

The expressions of gratitude to Dr Parker, couched in extravagant oriental language, appear not infrequently in the printed reports Some of them might compete successfully with the twentieth century medical testimonials which are still served for daily pabulum by the press of our free country

Case 2 (No 2152 Figs 2 and 3) —*Amputation at the shoulder joint*—Po Ashing aged 23 entered the hospital, Nov 3 1836 Six years since he fell from a house and broke the humerus of the left arm Union so far took place as to render the arm serviceable till six months since in a crowd at a ‘sing song" it was again broken From that time, according to his statement the arm gradually became larger till it had attained its present enormous size Beside being painful the weight of it drew him quite to one side There was no doubt of its containing fluid I punctured the arm supposed that possibly it might contain pus A dark greenish fluid escaped with considerable force but soon became darker and more bloody The lancet was reentered nearly its whole length but the same discharge continued with a greater proportion of venous blood 32 ounces in all were discharged All were agreed that the only chance of life was in the removal of the arm

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[3] Chinese Repository xix 270

[4] Two celebrated physicians of antiquity

[5] Chinese Repository v 329

At 11 a m (the next day) the patient was seated in a chair supported around the waist by a sheet The time did not exceed a minute from the application of the scalpel till the arm was laid on the floor The best representation of the arm after amputation, so far as shape is concerned, is that of a large ham of bacon It weighed 16 catties, equal to 21⅛ pounds All who were present pronounced the case the most remarkable they had ever seen The patient is the first Chinese, so far as I know, who has ever voluntarily submitted to the amputation of a limb The patient made a good recovery

It is to be recalled that these operations were performed before the days of anesthetics, and the rapidity of operating is striking

Case 4 (No 3000,[7] Fig 5) —April 17, 1837 Lew Akin, aged 12 years, had a steatomatous tumor on the right hip, of a magnitude that required the patient to lean forward when she walked, in order to preserve her balance April 27, the usual indemnity being given by the parents, the tumor was removed in two minutes and fourteen seconds Its circumference (exceeding that of her body) was 2 feet at the base and much larger at the middle, it was very slightly attached and consisted of concentric layers of fatty substance, separated from each other by a surrounding serous membrane, till near the center it was found of a much firmer structure, resembling cartilage It weighed 5 catties, or 7 pounds avoirdupois In one week the whole was so far healed that the child was able to walk about the room without pain to herself or injury to the wound

I am indebted to Lamqua, who has taken an admirable likeness of the little girl, and a good representation of the tumor The more interesting cases that have been presented at the hospital, he has painted with equal success, and uniformly says that as there is no charge for "cutting," he can make none for painting

The foregoing is of interest as it is the only reference which I have found to the artist who did these paintings

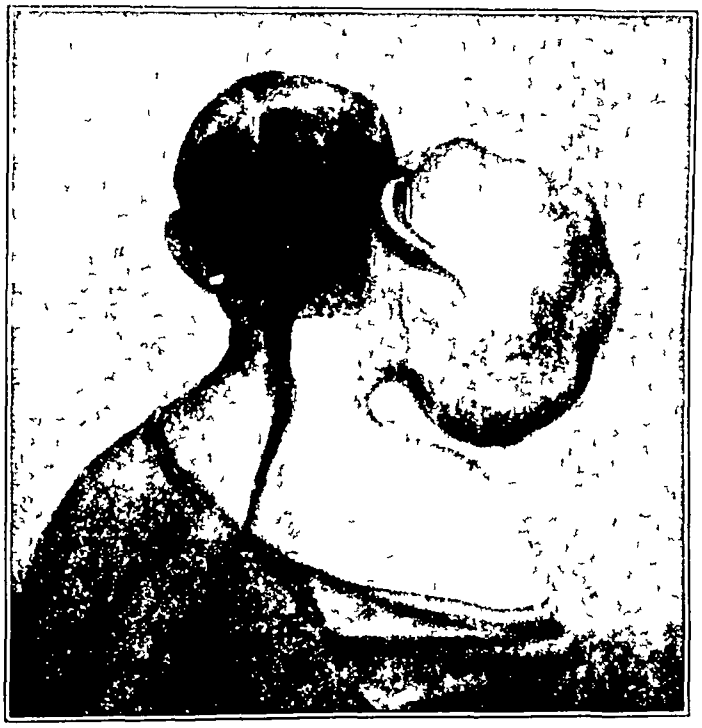

Fig 11 —See case report No 10

Case 5 (No 3488,[8] Fig 6) —*Cartilaginous tumor*—May 22, 1837 Woo Pun, aged 41, a shoemaker, had been afflicted seventeen years with a large unshapen tumor on the left side of his neck The tumor was 2 feet in circumference and weighed 7 pounds The patient scarce uttered a groan In twenty minutes he was comfortable in bed

Case 10 (No 15 000,[13] Fig 11) —*Glandular tumor*—Oct 16, 1844 Yang Kang, aged 35, of Sinhwui, latterly a beggar in Macao, had a tumor on the right side of his face, which commenced in the situation of the parotid gland, measuring 2 feet and 6 inches in circumference, weighing when extirpated 6½ catties, equal to 8⅔ pounds It commenced ten years since Portions of the tissue cut harder than the rest, and approached a cartilaginous or semiosseous structure The mingling hope of success and fears of the worst possible consequences excited devout and sincere intercessions at the throne of grace in his behalf, and an earnest use of means to prepare him for whatever might be the divine allotment He was told that others fervently entreated the most high God to save him, but that it was desired that he himself should pray to Him who alone would succeed the means to be used This patient became the porter of the hospital

In the following case, the serial number of the report does not agree with the number on the painting As the description corresponds entirely with the condition shown in the painting, however, and as the results of the Chinese custom of binding the feet are of general interest, the report and illustration are here given as belonging together

Case 11 (No 23 944,[14] Fig 12) —*Loss of both feet at the ankle, from compression*—March 8, 1847 Lu Akwang, an interesting little girl of Honan, 7 years of age February 9, agreeably to a custom that has prevailed in China for thousands of years, the bandages were applied "a la mode" to her feet, occasioned her excessive sufferings, which after the lapse of a fortnight became insupportable, and the parents were reluctantly compelled to remove the bandages, when, as the father represented, the toes were found discolored Gangrene had commenced and when she was brought to the hospital March 8, it had extended to the whole foot The line of demarcation formed at the ankles, and both feet were perfectly black, shriveled and dry, and nearly ready to drop off at the ankle joint The left foot separated a few days after, and within about ten days, the right also, leaving the stumps healthy, the granulation rapidly covering the bone and new skin forming at the edges The friends preferring it, notwithstanding advice to the contrary, they were furnished with the necessary dressings, and the child was treated at home, being brought occasionally to the hospital The last time she was seen, the right stump had nearly healed over, the other was less advanced in the healing process Since the occurrence of this case, I have heard, on good authority, of several others similar, a painful comment on the cruelty of this custom, to which millions in China have been subject during many centuries past The origin of this practice has been ascribed to Tanke, an infamous empress, 1100 B C, who was born with club feet She is represented as having great influence over the emperor whom she induced to issue an imperial edict, adopting her feet as the model of beauty, and requiring the compression of the infant females' feet so as to conform to the imperial edict This account is necessarily traditionary, as it dates from a period long prior to the universal destruction of Chinese books in the Tsin dynasty, 300 B C Had the custom been introduced 200 years since by the conquering Tartars, as some European writers have stated, it must have been so recorded in existing history

Another account furnished by an intelligent Chinese is as follows "The compressing of the feet of female children, tradition says, commenced under the Emperor Yangte, of the Suy dynasty, 605 A D, who ordered his concubine to bandage her feet, and in the sole of her shoe, there was placed a stamp of the lotus flower, with aromatics deposited within it, so that at each step she took there was left on the ground the print of the lotus flower, hence the saying that her steps produced the golden lotus, and to the present day men compliment little girls with small compressed feet by designating them the golden lotus"

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[7] Chinese Repository, vi, 39
[8] Chinese Repository, vi, 436
[13] Chinese Repository, xiv, 4 0
[14] Chinese Repository xvii 141

The fact that none of the Chinese classics allude to the subject is presumptive evidence that the practice did *not* exist so early as the days of Confucius During some of the successive dynasties the practice has been partially suspended as under the Ming dynasty they were comparatively few but it is very general among all except the Tartars, in the present reign

OTHER ACTIVITIES

In Parker's later reports are numerous cases of lithotomy, in some of which he removed calculi of large size, and one of the results of these operations is the unusual collection of large urinary calculi now in the possession of the Yale University School of Medicine

Beginning with 1844 Parker was able to give somewhat less of his time to the hospital because of the diplomatic work which then and afterward engaged a part of his attention Still, ten years later, on the date of his fiftieth birthday, June 18, 1854, he could record in his diary

> To tens of thousands of Chinese I have been permitted to preach the gospel of salvation, and to 52,500 afflicted with physical ills of our common humanity, directly or indirectly I have been permitted to administer with a degree of success that demands praise to Him who is the giver of health and life

Fig 12—See case report No 11

From the instructions of the Prudential Committee of the American Board of Foreign Missions, which were delivered to Dr Parker on the occasion of the meeting at the Bleeker Street Presbyterian Church in New York, at which he was dedicated as a missionary, the following quotation is taken

> The medical and surgical knowledge you have acquired you will employ, as you have opportunity, in relieving the bodily afflictions of the people You will also be ready, as you can, to aid in giving to them our arts and sciences But these, you will never forget, are to receive your attention only as they can be made handmaids to the gospel The character of a physician or of a man of science respectable as they are or useful as they may be in evangelizing China, you will never suffer to supersede or interfere with your character as a teacher of religion

These instructions Dr Parker evidently carried out to the letter in all of his medical work

When the first commissioner from the United States to China reached there in 1844, he at once appointed Parker as secretary to the legation, and they entered on what Parker speaks of as the gigantic undertaking of securing recognition and definite commercial standing for the United States From this time he was employed first as secretary and interpreter, later as chargé d'affaires ad interim, and then acting commissioner Under the strain of the excessive amount of work which he was carrying, his health gave way, and in May, 1855, he sailed for America The prolonged rest on shipboard so completely restored his health that he reached America in fairly good condition The affairs in China were so complicated that President Pierce urged him, as the best man available, to return at once to China for the purpose of arranging a new treaty Parker finally accepted, and arrived at Macao in January, 1856 It is not my intention to follow him in this diplomatic work any further than to note that his first official act was to strike a blow against traffic in Chinese coolies After establishing a basis for a new treaty between America and China, he finally left for America in 1857 The numerous honors which came to him in his later years are of interest, but hardly to be referred to here In June, 1859, his only son was born, and his own birthday, which came five days later, we find recorded as the happiest birthday of his life, he knew then beyond doubt that "praying breath shall not be spent in vain"

He began to collect the vast amount of material accumulated in China with a view of publishing a medical work, but this never went further than a comprehensive plan, with the beginning of an introduction

In his declining years, he appears to have found especial satisfaction in his connection with the Smithsonian Institution, of which he was elected a regent in 1868 and remained as such until 1885 Much of his time he spent at his old home in Framingham, Mass He died, Jan 10, 1888, in his eighty-fourth year

This short account of Dr Parker's life has placed the emphasis on what appears to me to have been his greatest accomplishment He was a missionary in the strict sense of the word, and a diplomat of no mean order But his chief contribution to the spread of civilization was as a medical man, in founding medical missions He appreciated to the full the value of combining the healing of disease with the teaching of eternal truth

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Drugs and Stamina.—If the quantity of medicine a citizen takes is any index of his physical condition, then this nation needs to take thought of the stamina of its people—*Health Letter* Life Extension Institute

THYROID EXTRACT IN THE TREATMENT OF MALIGNANT UVEITIS *

JAMES BORDLEY, Jr, M D
BALTIMORE

Last year before the American Ophthalmological Society I presented a communication entitled "Malignant Uveitis Treated With Thyroid Extract" It is my purpose to make this paper merely a supplementary statement

I would have it understood that I do not claim that thyroid extract is a panacea for all types of malignant uveitis or, indeed, for any especial type It will take much more investigation and many more cases than I have treated to prove even its usefulness I have seen patients apparently relieved of uveitis by the administration of thyroid gland, and it seems to me worth while to call the attention of ophthalmologists to this very interesting possibility

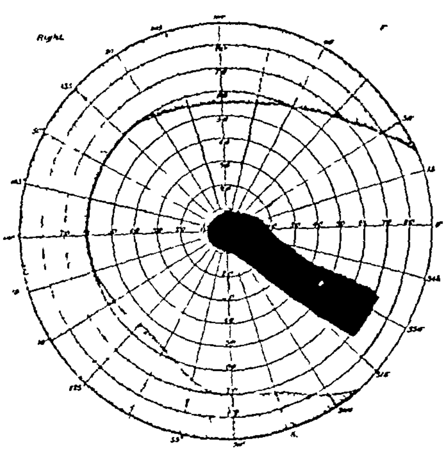

Fig 1 —Field of vision, Case 1, Nov 2, 1915

In my original communication I said I was convinced that in malignant uveitis we had to deal with two factors an infection, and an eye that makes a strong defensive, but lacks the something necessary to an offensive fight Indeed, in every one of the five cases there cited, a focus of infection outside of the eye was discovered While it is proper that we should bend our efforts to the discovery of the source of infection, it must be remembered that the mere finding of a focus is not proof of its causative relation Nor should we forget that malignant uveitis once established becomes an entity and not a symptom We can remove the original source of infection and still not materially lessen the progress of the ocular changes

We cannot anticipate and often cannot discover secondary foci which may play an important part in the degenerative process It therefore becomes necessary for us to fortify the eye against invasion, and to promote a strong offensive effort on its part

Having observed the profound changes which frequently occur in the thyroid gland following severe infections, such as tonsillitis, peritonitis and skin burns, I am prepared to believe that the thyroid gland plays an important part in the body's fight against infection or the results of infection To me, therefore, it is not a very great stretch of the imagination to believe that the favorable results obtained in the treatment of uveitis with thyroid extract are based on a very logical foundation

Of course it can be argued, and with much reason, that the cases cited by me have not passed over as long a period of quiescence as do many cases before there is a repetition of the attacks My personal experience, however, does not lend color to this argument I am as doubtful of "repeated attacks" of malignant uveitis as I am convinced of recurrent acute exacerbations of a latent malignant uveitis In other words, I have seen cases during quiet periods, but in all of these cases there was definite evidence that the uveitis still existed Now, of cases dealt with in my former article four of the patients, so far as can be determined by examination, are well, not one of them having had the slightest sign of trouble since my last report While I am not prepared to say that these patients will not have attacks in the future, I am convinced that if such a misfortune should overtake them, we have an efficient remedy at hand to combat their disease

I have additional evidence in two new cases to support the idea of the value of thyroid extract in malignant uveitis

REPORT OF CASES

Case 1 —A woman, aged 27, for several years has come to me for glasses from time to time Both with and without low grade hypermetropic astigmatic lenses, her vision was normal No pathologic changes were ever found Nov 2, 1915, she consulted me about her right eye The cornea was steamy, the iris semidilated but responsive to light and accommodation vision was 2/200, the result of a large central scotoma (Fig 1) Tension was 45 She was placed in the hospital, and a strong solution of physostigmin (eserin) was instilled in the eye every two hours As the tension had increased in twenty-four hours to 70 and the pain was more intense, she was given sodium salicylate in large doses often repeated During the late hours of the same day the tension fell to 40, and in twenty-four hours the steaminess and pain had disappeared and the tension was 22 In a few days there was an increase in tension to 60, and for the first time a slight circumcorneal injection and dots on Descemet's membrane were noted A systematic investigation was then started Dr Thomas R Brown made a complete physical examination, including analyses of urine, stomach contents and feces, and reported the patient physically normal A Wassermann test was made by Dr Albert Keidel, and proved negative Tuberculin reactions were negative Dr Henry Strasser, a dentist, was asked to examine the teeth He found a "suspicious bicuspid right upper jaw" This suspicion was confirmed by roentgenoscopy, and when the tooth was extracted it uncovered quite a large periapical abscess and much destruction of the root A complete Roentgen examination of all the teeth and the accessory nasal sinuses failed to reveal further trouble An encysted mass of foul smelling debris was removed from the right tonsil For eleven days following extraction of the tooth the sodium salicylate and physostigmin were continued At the end of that time the posterior surface of the cornea was covered with deposits, and the patient suffered intensely from photophobia Iodothyrin in doses of 2½ grains was then started, given at first once a day and then increased to three times a day All other medicine was discontinued

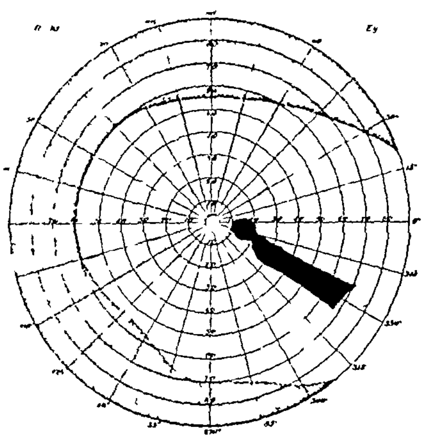

Fig 2 —Field of vision, Case 1, Dec 8, 1915

The rapidity of the change for the better can be best appreciated by a glance at the fields of vision, one taken November 2 (Fig 1) and the other December 8 (Fig 2) There was a like alteration in the descemetic disturbance, and the intra-ocular tension at this date was 35 Jan 31, 1916, the eye was to all appearances entirely normal except for a scotoma, and the vision was 20/15 The patient was seen

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* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June, 1916

a day or so ago and carefully examined Except for the small scotoma which has persisted the eye was free from trouble

Case 2—A woman, aged 25, married, developed trouble in her right eye in June, 1915 She consulted an ophthalmologist who told her she had an incurable form of malignant uveitis She came to me for a glass for the left eye, December 16 I found a pronounced attack of uveitis in the right eye with a clouded vitreous, pupil moderate in size and barely responsive to light the iris free from tags (Fig 3) Tension in the eyes was abnormally low, registering only 12 Vision was $^{20}/_{100}$ The posterior surface of the cornea was filled with deposits of various sizes

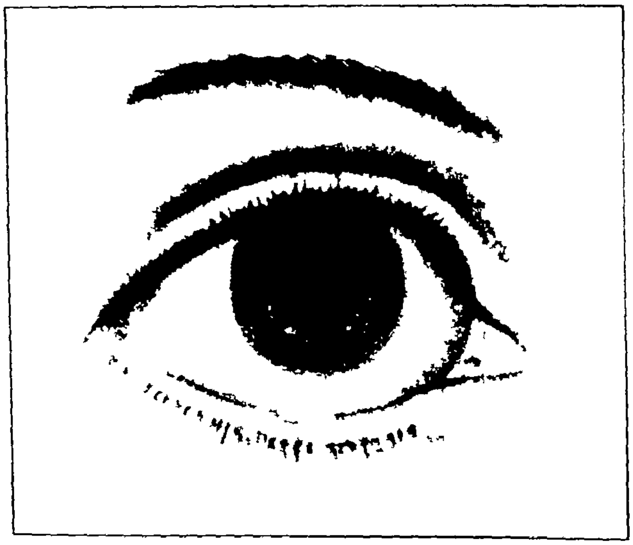

Fig 3—Condition of eye Case 2

This case was to me one of more than ordinary interest because I had treated a sister with choroidoretinitis and nystagmus, had seen a brother with an almost complete absence of the bridge of his nose, and knew that her father prior to his marriage had contracted syphilis for which he had refused treatment I knew also that her mother had a serious form of exophthalmic goiter

Iodothyrine in 2½ grain doses was immediately started, and increased until she was given 7½ grains a day

December 22, vision was $^{20}/_{80}$ the tension had increased to 20, and she was greatly impressed by her improvement January 15, her vision had improved to $^{20}/_{40}$, and the temporal half of the vitreous was clear enough to study the details of that portion of the fundus January 31, the vitreous had still further cleared, and no dots were discoverable on Descemet's membrane Vision was $^{20}/_{30}$, less one or two letters When she passed from under my care the latter part of February her vision was a full $^{20}/_{30}$, her vitreous entirely clear, with no deposits on the cornea, and except for an enlargement of the blind spot (Fig 4) I could discover no evidence of her former trouble

During her treatment she at first complained of marked double vision The cause of this I was never able to determine Prior to the introduction of the iodothyrine this patient was found physically normal Roentgenograms of the sinuses and teeth were negative and the Wassermann reaction was likewise negative I think it is quite possible that the eye disease was a late manifestation of inherited syphilis

330 North Charles Street

ABSTRACT OF DISCUSSION

Dr. Nelson M Black Milwaukee It is certain that none of the methods of treatment for malignant uveitis has heretofore given results in a sufficient number of cases to warrant our placing any dependence on any one form of treatment In the majority of instances there is improvement for a time, possibly, but in nearly every instance the result is the same, an acute exacerbation or a recrudescence, for these cases are rarely absolutely cured Even in cases of apparent complete disappearance of the disease, the eye is practically useless, the result of the vitreous opacities which fail to clear up, or which become more numerous and dense, or the permanent opacity of the cornea, due to the density of the exudate Dr Bordley's hypothesis as to why thyroid extract should be beneficial in the treatment of malignant uveitis seems based on thoughtful deduction and sound judgment First there is a primary source of infection somewhere in the body Second, an organ is invaded which puts up a strong defensive, but lacks "the something" to make the fight effective But why was that organ invaded primarily? Was it not because "the something" was lacking which Dr Bordley has found, if added to the body, stimulates the fighting power of the eye? The result of the invasion of the eye from the primary source of infection is malignant uveitis, but this is not the end-result, for removal of all the discoverable sources of infection, together with local treatment of the affected part, does not tend to improve the condition Is it not because the eye itself has become the source of infection which now more than takes care of the something" which the body should have furnished to combat the primary invasion? This "something," from the results obtained by Dr Bordley in the reported cases appears to be the secretion of one of the ductless glands This substance must have been lacking in the body in sufficient amounts or we should not have had the original invasion of the system So it seems we must go back still further and seek the cause of the lack of sufficient secretion of the ductless glands to protect from systemic invasion by infection Dr R C Brown of Milwaukee recently advanced the theory that through the ingestion of too great quantities of meats, meat soups and eggs the natural defenses of the body of which the ductless glands are the principal ones cannot neutralize and render harmless the protein poisons they contain As a result the body resistance is lowered and invasion is invited Dr Brown has found that complete elimination of the foodstuffs containing protein poison from the diet of individuals who are susceptible to its effects results in the manifestations promptly disappearing So it may be possible that the primary etiologic factor is in the main a protein diet in excess of the individual's ductless gland capacity I should like to mention a case of mild but persistent uveitis following the extraction of a cataract by the Smith-Fisher method in a woman of 65 The operation was performed about two weeks after she had been subjected to an hysterectomy, as she did not wish to return to the hospital again The eye was not looked at for seven days following the extraction, as she had no discomfort When the bandage was removed the lids were edematous, and there was marked photophobia and free lacrimation The cornea was clear and bright, but there was considerable circumcorneal injection and she claimed she could not see anything The patient was also morose, nervous and despondent Hot compressions, atropin and dionin were ordered and for a week no change seemed to take place At this time I received a copy of Dr Bordley's paper I immediately ordered 1 grain doses of thyroid extract twice daily increasing cautiously, and meats meat soups and eggs were eliminated from the diet Within a week the change was marvelous The local treatment was stopped and the patient became cheerful and happy, and within a few days told

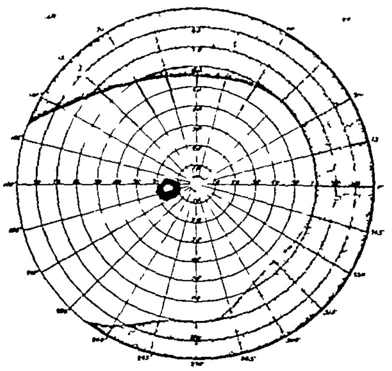

Fig 4—Field of vision Case 2 Feb 26 1916

me she could see to count her fingers She was making rapid progress when seen last

Dr Edward C Ellert, Memphis, Tenn I have used thyroid extract in six cases of uveitis and I am impressed with the fact that in addition to the treatment of accompanying and apparently casual constitutional conditions, the relief of focal infections, etc, thyroid extract seems to have a beneficial effect in uveitis, but more extended experience is needed to enable us to say what we may expect from its use

Dr Clark W Hawley, Chicago Four years ago I had a very severe case of erysipelas which left me with several troubles that I could not account for One of them was swelling of the feet and legs, and it was difficult for me to walk on account of pain I supposed it was heart and kidney trouble, but both were eliminated I went to a laboratory and they told me I was suffering from autointoxication at this time I had had chronic uveitis for some time, so that it was difficult to read newspaper print without shaking my head, when the bodies would float back again I saw two large yellow circles composed of small opacities They were increasing in size Fortunately I discovered the source of it I commenced treating the autointoxication for the swollen feet, and within thirty days more than half the opacities had disappeared In two months I could read newspaper print comfortably This was in September I used a restricted diet mainly In February or March I believed I might increase the diet a little and I made an attempt to eat meat In a week the opacities began to return I stopped using meat and the effect could be seen in a few days I have quite a number of patients with chronic uveitis who have, from that discovery, been very much benefited, so that, perhaps, my personal experience may be of as much value to others to help clear up some indefinite cases

EFFECTS OF HEAT ON THE EYE*

WILLIAM E SHAHAN, MD
ST LOUIS

Since ophthalmic thermotherapy is in an indefinite state, and the beneficial or harmful effects of heat on the eye are moot questions among ophthalmologists, it is desirable to make an exact study of the effects of heat when applied to the eye in various conditions of health and disease

In order that the study may be exact, the following preliminaries must be satisfied

1 The devising of some simple, convenient means of applying constant, measured quantities of heat directly to the corneal or scleral surfaces for measured lengths of time

2 The determining by experiment on animals of the physiologic limit of heat tolerance for stated lengths of time The physiologic limit of heat tolerance will be defined as the maximum temperature at which tissues may be held for stated lengths of time without permanently harmful effects

3 The application of physiologic limits to various pathologic conditions (infections, etc), and tabulation of results This is the aim and end of the study

The first of these preliminaries was solved in a satisfactory way by the construction of an instrument which may be conveniently designated as a thermophor

DESCRIPTION OF THE THERMOPHOR

This consists of a central brass tube one-half inch in diameter and 6 inches long with a walled off slot 4 inches long and five-sixteenths inch wide, cut into its side This walled off rectangular space communicates directly with the interior of the tube and serves to contain a zinc-iron sensitive strip One end of this sensitive strip is fixed to insulating material in one end of the slot, the other end is tipped with platinum plate and swings free Around the brass tube and the rectangular space containing the sensitive strip, a sheet of insulating material is placed, and around this is wound about 6 feet of No 26 nichrome resistance wire One end of the resistance wire is fastened to the fixed end of the sensitive strip while the other serves as one of the terminals of the electric heating circuit Over the end of the rectangular space in which the platinum tipped end of the sensitive strip swings is a small brass casing tapped for an 8-32 machine screw and fastened by means of insulating material to the central brass tube The machine screw carries on its head a nonconducting disk of fiber Its tip carries a platinum point The screw is connected directly with the other terminal of the heating circuit By revolving this screw, its platinum tip can be brought into contact with the platinum plate of the sensitive strip and current be made to flow through the resistance wire, generating heat Almost immediately the zinc element of the sensitive strip will expand more than the iron, and carry the platinum plate away from the platinum tip of the regulating screw, breaking the circuit and stopping the heat Shortly the strip will cool and the plate again come into contact with the screw point, reestablishing the circuit and heat flow for a few seconds After oscillating for a short time, the temperature of the interior of the central brass tube will settle down to a nearly constant quantity

When it is desired to use the instrument, a nickel plated brass heat conducting head or applicator of the size and shape desired is placed within the central brass tube and allowed to project about one-half inch beyond its end This projecting end is shaped to a definite size, and is intended to be placed in direct contact with the part of the eye to be heated The center of this applicator is drilled out as nearly as possible to its tip so as to contain a thermometer In the end of the central brass tube opposite the end containing the applicator is a small brass collar with an aperture of a size just sufficient to admit the thermometer When the thermophor is in use, therefore, the thermometer extends through its center and has its bulb in the exposed head of the applicator

Around the above described resistance wire is placed suitable insulating material and the whole inserted into a tube of ordinary red fiber so as to make a neat looking instrument The amount of resistance wire used in the instrument is just enough to get the desired heat when connected up in a series on a 110 volt current with a 32 candle carbon lamp If connected directly with a 110 volt current, the amount of heat generated would shortly destroy the instrument Up to 130 F this instrument can readily be kept constant within 1 degree Up to 150 F, variations of 1½ degrees may occur The platinum terminals must of course be kept clean

The apparatus for determining the thermal behavior of the interior of the eye, when the applicator of the thermophor is in contact with all or a part of its accessible surface, consists of a dead-beat low resistance galvanometer supplied by the Leeds & Northrup Company, a vacuum bottle and several German silver-iron thermocouples and all-iron switch with several poles The galvanometer was kindly lent me by Prof Lindly Pyle from the Department of Physics in Washington University German silver and iron wires (of small caliber) were selected for these investigations by advice of Professor Pyle The special advantage of these two metals for thermocouple junctions is that for the required range of temperature (from 80 to 150 F) that part of the hyperbolic curve used is practically a straight line

In constructing the thermocouples for these investigations, two German silver wires were soldered at one end to an iron wire, which was connected to one pole of the galvanometer The two German silver wires were then soldered at their other ends to two iron wires which were connected to two separate poles of the iron switch Another iron wire ran from the switch to the other pole of the galvanometer By means of this arrangement either of the junctions could be almost immediately connected with the galvanometer, and the temperature of its surroundings indicated For calibrating these thermocouples an especially large thermophor with a sensitive strip 8 inches long and about 15 feet No 26 nichrome resistance wire was constructed so that temperatures could be held constant within very narrow limits for long periods of time Previous attempts at calibration in water heated by a Bunsen burner had ended in failure, owing to "lag" of the mercury in the thermometer In this calibration a large bulbed thermometer with a long stem was used, and no reading was taken until after the mercury had been stationary for some time and all motion of the galvanometer mirror had ceased All thermometric readings were made with the aid of a hand lens and from a position such that the scratch on the thermometer stem was exactly in line with its image as reflected from the column of mercury The junctions to be calibrated were bound to the bulb of the thermometer The cross piece on the arm of the galvanometer is graduated in millimeters and it was found that 1 F corresponded to exactly 4 mm of the arm throughout the whole range from 90 to 150 F The readings obtained from a smaller thermometer used in the thermophor proper would differ from those obtained from the larger (and slower) thermometer by from 0 1 to 0 4 F The probable limit of accuracy of all readings may be stated with reasonable certainty to be 0 25 degree F as shown by variations in several graphs drawn

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* From the Laboratory of Ophthalmological Pathology, in the Department of Surgery, Washington University Medical School

* Read before the Section on Ophthalmology at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June, 1916

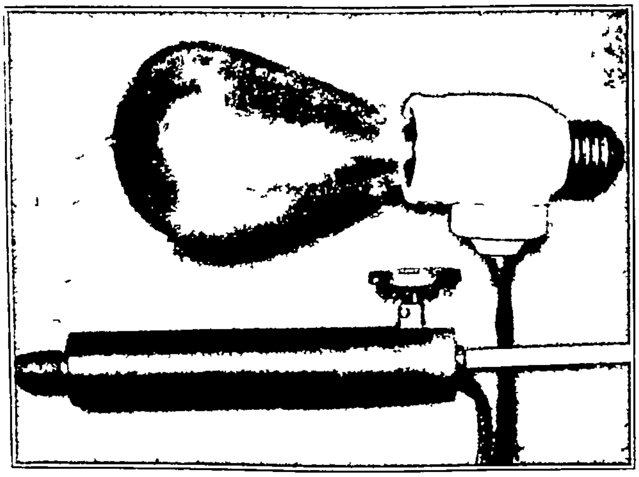

Fig 1 —Complete thermophor with connections

When this apparatus is set up for use, the common joint, where two German silver wires are soldered to one iron wire, the whole being insulated, is placed in the vacuum bottle which has been filled with cracked ice and water drained from it (the ice having been made from distilled water) It takes about three days for the ice placed in a vacuum bottle like this to melt, consequently a junction placed in such a bottle can be kept at constant temperature for that length of time, and the apparatus be constantly ready for use The other junctions can then be arranged (say) so that one is in a groove in the tip of the applicator of the thermophor, and in direct contact with the corneal surface, while the second is in the large calibration thermophor so that if the galvanometer should be accidentally jarred, it can be properly readjusted With the apparatus thus set up, we are in a position to read off the average temperature of the applicator (from the thermometer in it), and the exact temperature in the transition plane between the tip of the applicator and the corneal (or other) surface, in quick rotation, and study any relation between them

In these experiments it is necessary for the wires of the thermocouples to be insulated by some convenient material that takes up very little space The best material found for this purpose was a celluloid varnish made by dissolving 15 gm of sheet celluloid in 85 c c of acetone and 15 c c of amylacetate This makes a firm, flexible, waterproof insulation entirely stable for the temperatures employed, and easily painted on with a camel's hair brush

EXPERIMENTS

In rough preliminary experiments in which parts of dog's or pig's eyes were placed in a test tube with a thermometer and 0 7 per cent sodium chlorid solution and the whole slowly heated in a water bath over a Bunsen burner, the following results were noted

1 Corneal epithelium began to cloud faintly at 122 F and became unmistakably clouded after remaining at that temperature for one minute At 123 F there was slight opalescence of corneal substance, at 130 F dense opalescence At 138 F the epithelium was white, and at 140 F the corneal substance was shrinking and the epithelium shriveled

2 The lens began clouding slightly at 135 F , began to get opalescent at 142 F , became opal white at 157 F , and pearl white above that, and became of a firm rubberlike consistency

3 Vitreous remained perfectly unchanged until the temperature approached 212 F , when the whole gelatinous mass became perfectly fluid, and remained so on cooling, even to low temperatures (approaching 32 F)

These experiments would suggest beginning on living eyes with a temperature of about 120 F and varying that according to findings

It is realized that when the temperature of the applicator is raised considerably above the normal temperature of the eye, the surface applied to the eye, in consequence of rapid withdrawal of heat, may have a lower temperature than that indicated by the thermometer within it Accordingly, a small hole was drilled through the end of an applicator parallel to the surface to be applied to the eye and as near to it as possible Within this hole was placed a thermojunction, and the temperature indicated by it compared with that indicated by the thermometer By means of this arrangement it was found that up to 125 F the thermometer accurately indicated the temperature applied to the corneal surface (our limit of accuracy is 0 25 F) At 128 F the thermometer was 1 degree ahead of the thermocouple, at 131 F the thermometer was 2 degrees ahead, and at 135 the thermometer was 3 6 degrees ahead

Corrections for these differences are made in the readings noted below It was soon found in searching for physiologic limits that the different tissues of the eye have different limits

The first to succumb to heat is the corneal epithelium The limit of tolerance of this tissue was determined by means of an applicator with an end surface 14 mm in diameter, consequently covering the entire cornea It was found that application of 120 F (48 9 C) for ten minutes removed the epithelium completely over the whole of the area heated, 119 F (48 3 C) did likewise, 118 F (47 8 C) left an irregular border of incomplete desquamation By the next day this had desquamated, leaving a sharply defined border A temperature of 117 F (47 2 C) applied for ten minutes caused an extremely faint opalescence, but not the slightest immediate desquamation, as shown by total absence of staining with fluorescein Twenty-four hours later, however, an area 5 by 3 5 mm had desquamated Forty-eight hours later this was completely replaced, but clouded The clouding disappeared in three or four days A temperature of 116 F (46 6 C) did not cause any desquamation, immediate or remote, nor was there any clouding or other pathologic results This may be stated, therefore, as the limit of physiologic tolerance of the corneal epithelium for a ten minute application

When temperatures higher than 117 F were used with an applicator covering all or most of the cornea, it was observed that the epithelium replaced itself rapidly to within 1 5 or 2 mm of the center, or even replaced itself entirely, but subsequently broke down and entered into a state of dystrophy during which the substantia propria gradually wasted away with much discharge of leukocytes, perforation occurring after about three weeks When the area denuded of epithelium was no greater than 11 mm in diameter (where the cornea was 14 mm in diameter), no such effects were noted, the epithelium replacing itself completely and permanently

The anesthetic used in these experiments was cocain 5 per cent in epinephrin 1 2,000 The "drying effect" of cocain must be guarded against The drying is not due to the cocain but to the fact that when a rabbit's cornea is anesthetized, the animal will not blink its lids In this regard a rabbit's eyes appear to be independent of one another The untreated eye will blink, while the anesthetized one will remain constantly open and its surface dry

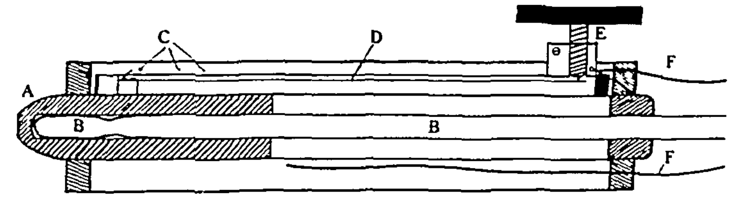

Fig 2 —Longitudinal section of thermophor *A* applicator, *B B*, thermometer within applicator, *C*, resistance wires for generating heat, *D* zinc iron sensitive strip, *E*, regulating screw, *F, F*, wires for electric current

In applying heat for effects on the substantia propria, an applicator with a 7 mm point was used The following data were obtained

A temperature of 124 F (51 1 C) applied for ten minutes did not cloud the substantia propria Twenty-four hours later an area 7 by 8 mm was denuded of epithelium, forty-eight hours later the denuded area was 2 5 by 3 mm , seventy-two hours later, the epithelium was entirely replaced The cornea was clouded over the treated area Two weeks later, the cornea was entirely clear A temperature of 128 4 F (53 5 C) applied for ten minutes to the upper part of the cornea caused slight clouding of the substantia propria (Bowman's membrane being included with this structure) One day later, the whole upper part of the cornea was opal white, and the iris was indistinctly visible through it There was no discharge A sharply defined area 9 by 9 mm was denuded of epithelium Three days later, the epithelium was completely replaced, the cornea continued opalescent Seventeen days later, the cornea was entirely clear except for slight pigmentation which streamed in from the periphery during the process of repair

A temperature of 131 6 F (55 3 C) applied for ten minutes caused some clouding over the area treated Next day an area 10 by 11 mm was denuded of epithelium The cornea was more clouded Six days later there was a very faint clouding of the cornea with faint irregularity of the surface Twenty-four days later it was almost entirely clear

A temperature of 135 3 F (57 4 C) was applied for ten minutes under a general anesthetic (ether) The cornea was markedly clouded over the area treated The epithelium was denuded over an area 11 mm in diameter (the diameter of the cornea was 14 mm) That part of the cornea not in contact with the applicator was not changed Next day the cornea was more clouded The pupil was somewhat irregular at the lower side The epithelium was denuded over an area 9 mm in diameter Two days later, the epithelium was denuded over an area 4 by 6 mm Three days later the epithelium was entirely replaced, but the clouding unchanged Seven days later, the cornea still was gray and bulging over the site of the application in the form of a keratoconus Vessels were growing markedly into the cornea from above, there was no discharge Ten days later, keratoconus was more marked Twelve days later keratoconus was very marked Fifteen days later, the keratoconus was receding, and the cornea was much clearer Twenty days later, the keratoconus was about gone, and the cornea was clouded only over the center of the heated area Twenty-eight days later, the keratoconus was gone, and the site of apex was occupied by a slightly pigmented and vascular scar Most of the cornea was clear

It is evident from these experiments that the substantia propria has no sharply defined limit of physiologic tolerance to heat, but that the effects on it vary increasingly with increase in the intensity of the heat applied It would appear, however, that about 130 F (54 4 C) is as high as it is safe to go without producing gross permanent changes

There are some changes in the interior of the eye worthy of note

Shortly after one cornea had been anesthetized, the pupil was 11 mm in diameter After the application of a 14 mm applicator ten minutes at 116 F (46 6 C) the pupil was 3 mm in diameter, although the anesthetic effect on the cornea was still in full force This miotic effect of heat was a constant and striking feature in all these experiments In cases in which the pupil was fully dilated and the heat centrally applied so that the point of application was rather distant from the iris, the effect was less noticeable When the experiment was done under ether, the effect was much more marked The miosis was always transient When the heat reached 128 F (53 3 C) and was applied opposite a part of the iris, either above or below, that part of the iris subsequently (in about two weeks) became gray, somewhat shrunken and drawn toward the filtration angle, and evidently atrophied, without apparent injury to the rest of the iris or the eye Physostigmin (eserin) applied in such a case did not affect the discolored part, while causing marked miosis in all the rest of the iris

By means of the thermocouple set up as described above, the rate at which heat passed through the cornea was studied *First, general data as to the rabbit's temperature* were obtained The rectal temperature (thermometer) was 104 2 F (40 1 C) The rectal temperature (thermocouple) was 104 2 F The temperature of the upper culdesac varied from 102 F (38 9 C) to 103 F (39 4 C), increasing as the eye was handled The temperature of the lower culdesac varied from 102 2 F (39 C) to 103 7 F (39 8 C), increasing as the eye was handled The temperature under the third lid was constantly 103 F (39 4 C)

The junction was then introduced into the center of the anterior chamber just behind the cornea The temperature there ranged from 101 2 to 101 7 F (38 4 to 38 7 C) A 7 mm applicator was then applied at 123 F (50 5 C) The temperature just behind the cornea *rapidly* rose to 116 5 F (46 9 C), where it became stationary The applicator was then removed, and the temperature dropped to 102 5 F (39.2 C) in fifty seconds The applicator was then raised to 132 5 F (55 8 C), and applied to the cornea The tem perature just behind the cornea then rose rapidly to 124 F (51 1 C), where it became stationary The applicator was then removed, and in one and a half minutes the temperature just behind the cornea fell to 103 2 F (39 5 C) and subsequently fell slowly to 100.2 F (37 9 C) The applicator at 133 F (56 1 C) was now applied to the cornea, and the temperature just behind the cornea rose from 100 2 F (37 9 C) to 122 7 F (50 4 C) in one and a half minutes

The vitreous was apparently unaffected by changes in the anterior chamber, remaining constantly at a temperature very near that of the body temperature of the animal This shows that heat passes rapidly through the cornea in either direction Any degree of heat, therefore, that will affect organisms or pathologic conditions on the surface of the cornea ought to affect them anywhere in its interior

Most of the eyes on which the foregoing experiments were performed have been removed, and are being prepared for histologic investigation by Dr Harvey D Lamb, to whom I am indebted for earnest cooperation throughout this investigation The results of this will be reported in a separate paper

There are some organisms, such as the pneumococcus of ulcus serpens, that have a relatively low thermal death point The destructive effects of this organism on some corneas are well known There appeared to be excellent theoretical reasons for believing that the cornea would stand more heat than such invading organisms It was now very desirable to obtain some virulent pneumococci for the production of experimental hypopyon ulcers After considerable difficulty this was finally accomplished by Dr Lamb, who procured material from the lung of a patient who had died of bronchopneumonia with pulmonary infarction and thrombosis of a lateral sinus

This was injected into mice These died of general septicemia, and cultures were taken from the blood of one of them on serum agar A profuse growth of pneumococci (identified in the laboratory of bacteriology) took place on this Material from this tube was then inoculated into the center of the cornea of several rabbits Ulceration took place in every case Some of them proceeded to spontaneous cure with or without hypopyon Others ran a destructive course with hypopyon

To these ulcers various degrees of heat were applied with variously sized applicators according to the size of the ulcer In one case 125 F (51 7 C) was applied for eight minutes with a 4 mm applicator Next day the ulcer was larger and progressing steadily Then 129 F (53 9 C) was applied for ten minutes under ether The ulcer was now about 5 mm in diameter An area 8 mm in diameter was denuded of epithelium From day to day the ulcer steadily grew larger The epithelium, however, completely replaced itself, converting the ulcer into an abscess by the third day This was punctured and thick pus expressed from the substantia propria Microscopic examination showed this to be chiefly mucoid material with a few bacteria A serum agar culture gave a profuse growth of pneumococci in twenty-four hours

In another case, 130 F (54 4 C) was applied for ten minutes under ether This ulcer recovered beautifully, as also did the opposite entirely untreated control

In another case, 130 F was applied for ten minutes under ether The heated cornea at the present writing is in worse condition than the opposite untreated control

In short, any temperature up to 130 F applied directly to an ulcus serpens for ten minutes appears to have no beneficial effect whatever It is probably even harmful This is the only condition so far investigated

Before heat is discarded as useless in these conditions, however, it is necessary to investigate another method of applying it, namely, that of applying higher degrees for shorter lengths of time As shown above, the full temperature applied to the anterior surface of the cornea reaches the posterior surface within two minutes, possibly within one minute If now beginning at 135 F or about 57 C successively higher temperatures are employed, there will certainly come a time when infecting organisms will be destroyed The effect of this temperature on the cornea for the given length of time can then be studied, and its usefulness or uselessness be established An investigation of this sort is now under way

ABSTRACT OF DISCUSSION

Dr T B Holloway, Philadelphia While the various properties or physiologic actions attributed to heat are well known, the most suitable method and duration for its application and the benefits to be derived from it in certain conditions are still matters for discussion In eye affections heat, as it can now be employed, is in the majority of instances an adjuvant to other lines of treatment, if we exclude the direct effect on certain conditions or structures that have been attributed to diathermy It must also be considered as to whether it is to be used for what might be described as its stimulating effects, styptic influences, or its destructive and cauterizing action Numerous instruments or appliances have been devised for the application of either dry or moist heat, but none has been more ingenious in its construction that the one described by Dr Shahan, which has also the distinct advantage of accurately measuring the degree of heat applied As he has stated, it remains for his future experiments to prove whether it has certain clinical advantages over other methods or appliances already described It is probable that the use of Dr Shahan's instrument would be attended by greater risk and it seems to approach more in its action the hot air douche or the method of Weekers, although both of these methods cause distinct, if only temporary, changes in the cornea Further, are these methods superior to the application of moist heat by means of hot irrigations, hot compresses, the dropping of hot water on the eye, the steam spray, or the mixture of steam and hot air? Finally, how do these measures compare in their efficiency to the development of heat by high frequency currents, so-called diathermy? In regard to the albumin content of the aqueous and the predominance of antibodies, Sattler found that hot air was no more efficient than other types of heat, that the agglutinins and hemolysins were increased by temperatures that produced inflammatory irritations, but that the highest temperature tolerable had no effect on the antibodies In this respect subconjunctival injections and tapping the anterior chamber were more efficient After later experiments he stated that diathermy afforded greater effects on the ciliary body than subconjunctival injections Zahn found that the temperature of the conjunctival sac could be raised on an average of 4 2 by diathermy, against 1 6 C with hot applications The results of various researches show that with diathermy the temperature tolerance is quite uniformly placed at 44 to 45 C (109 4 to 113 F) at which point chemosis of the conjunctiva and corneal changes develop, 42 C (107 6 F) is about the height that can be reached with comfort and safety The highest obtained by Waldmann on the human eye was 42 with diathermy and 37 5 (99 5 F) with hot application

If these various temperatures be compared with the temperatures obtained by Dr Shahan, whose experiments were made under cocain or ether it will be found that he attained considerably higher temperatures, that is, 46 6 C (116 F) as the physiologic tolerance of the corneal epithelium for a ten minute exposure, while 53 3 C (128 F) caused permanent changes in the iris, a higher temperature than 54 4 C (130 F) was apt to be followed by definite changes in the corneal stroma

Weekers and Angus MacNab have stated that a temperature of 42 C (107 6 F) for twenty-four hours will kill the pneumococcus and Morax-Axenfeld bacillus, while the former will succumb to a ten minute exposure at 56 C (132 8 F), the latter to a five minute exposure at 55 C (131 F) In his experiments on rabbits the essayist was still capable of obtaining a positive culture from a pneumococcus corneal lesion after a ten minute exposure to a temperature of 53 9 C (120 F) and states that a temperature of 54 4 C (130 F) was of no value We will watch with interest the future experiments of Dr Shahan when he uses a high temperature and shorter exposure, conditions that would seem to bring his heat effects in closer relation to that obtained by Weekers, Bourgeois and others In the presence of severe cornea ulceration after the failure of such cauterizing agents as phenol and iodin thoroughly applied, I rely on the actual cautery, but we must not lose sight of other adjuvants such as the vaccines

Dr John Green, St Louis Dr Shahan's experience with this method in experimentally produced pneumococcus ulcer in rabbits was not encouraging Recently an opportunity presented itself to try the thermophor on a patient with hypopyon keratitis The applications were made under the supervision of Dr Shahan so that the conditions were favorable for a fair test A worker in a chemical factory presented himself May 28 with a 4 mm, nearly round ulcer near the center of the cornea There was hypopyon rising to a little less than one-quarter the height of the anterior chamber Smear and culture showed pneumococci in abundance The thermophor was brought to a constant temperature of 115 F and gently but firmly held in contact with the ulcer for ten minutes The contact was practically continuous, except for momentary withdrawals, due to sudden shifts in the position of the eye At the end of the seance it was found that the epithelium had been denuded to a total diameter of 5 mm, the ulcer proper measuring 4 mm Atropin, 1 per cent three times a day, and boric acid irrigations were ordered May 29 there was only slight change in the ulcer, the hypopyon was either stationary or had increased a trifle Thermophor applied for ten minutes at 121 F May 30, the hypopyon was appreciably higher and the ulcer measured 5 5 mm in diameter Thermophor applied at 122 F for ten minutes May 31, hypopyon increased, ulcer spreading superficially as indicated by nasal and temporal subepithelial yellowish exudates Thermophor applied at 124 F for five minutes to the nasal side of the ulcer and for five minutes to the temporal side June 1, there was positive increase in the size of the ulcer but no tendency to penetrate deeply It was deemed inadvisable to pursue this line of treatment further The edges of the ulcer were touched with 20 per cent zinc sulphate solution and the ulcer itself buried in a mass of methylene blue powder The following day the inflammatory signs were less marked and the hypopyon had diminished A continuance of the methylene blue treatment was effective in checking the further spread of the ulcer and the hypopyon gradually diminished The patient is now making satisfactory progress

Dr L Howe, Buffalo We are very much indebted to the author for the way in which he has presented the negative phases of the effects of heat on the eye We must keep clearly in mind the factors involved, that is, the resistance of the eye and the resistance of the bacteria if we expect to kill them We now know definitely what the lethal point of the eye is Bacteriologists are not so well agreed as to the lethal point of bacteria When I prepared the paper three years ago which described for the first time this method of measuring the temperature of the eye by means of thermal junctions, I was rather surprised to find such a difference of opinion on this point among bacteriologists At that time I asked Professor Ernst of the Harvard Laboratory concerning the lethal point of the gonococcus He gave figures which made it quite sure that that form of bacteria could stand heat better than the eye It is true we use heat when we cauterize, but over only a very small surface The value of the measurement of heat does not relate to the higher temperatures But as we find moderate heat of advantage clinically the practical point is to determine with delicate tests, like the galvanometer, what the exact temperature is of the applications we make When that is done we can decide what class of cases are affected by increased temperature and in what way

Dr William E Shahan, St Louis This method should not be confused with any electric method where the electric current heats the tissues by passing through them In this method all unknown factors, except heat, have been eliminated, and the effects of this agent alone studied Neither should it be confused with any application of heat approaching cauterization Dr Howe's remarks on the practical impossibility of getting accurate results with the use of the mercury thermometer alone are fully concurred in and indebtedness to him for his paper on the thermocouple at Minneapolis in 1913 ought to be fully acknowledged

ORTHOPEDIC SURGERY IN WAR TIME*

ROBERT B OSGOOD, MD

BOSTON

We are of the opinion that efficiency as it is generally understood should not be the goal of life But we are also of the opinion that once a goal is set, it should be attained by the least expenditure of any energy which is worth saving, and we believe that this is what efficiency ought to mean

In a physical conflict such as war, the goal of both sides is set To attain it each must conserve the physical energy of its soldiers in order to increase their strength in battle Each must strive for the complete recovery of its wounded in order that the ranks may be kept as full as possible Finally, but perhaps most important of all in any long conflict, each must see to it that those large numbers who do not lose their lives, but who by reason of their mutilating wounds lose their fighting power, do not become a burden on the industrial community already depleted and vastly overburdened by the necessity of support of the armies in the field The few left at home are doing intensive work, and the wounded heroes, if the national strength is to be conserved, must have a still further test of their heroism and be made to contribute their remaining energy to help maintain their still efficient comrades

Our thesis is to be that orthopedic surgery has a very large part to play in (1) assuring physical efficiency in the ranks, (2) in conserving and restoring the function of the locomotive apparatus of the wounded, (3) in providing the physical possibility and perhaps reorganizing the means by which the war cripples may become happy, productive, wage earning citizens, instead of boastful, consuming, idle derelicts

ORTHOPEDIC EXAMINATION OF RECRUITS AND SOLDIERS IN TRAINING

Posture —It has not been, we believe, solely because of the better appearance presented by erect, full chested men, that all recruits are compelled to go through "setting up" exercises, and that good carriage is so strongly emphasized Life insurance figures suggest that the number of inches of chest expansion up to certain limits is in direct ratio to the quality of the risk

This important part of preventive work, namely, the acquisition and maintenance of a good posture, is surely essentially an orthopedic concern It is well looked after at present by the trainers of recruits It is possible if orthopedic help were sought that still more might be accomplished in the direction of simplification and more rapid attainment of the desired end

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* Read before the Section on *Orthopedic Surgery* at the Sixty Seventh Annual Session of the American Medical Association Detroit June, 1916

Feet and Shoeing —We are perhaps tempted to forget in these days of trench warfare that the feet of the soldiers are of supreme importance The front must be reached often by forced marches Railroads may supply men and provisions but do not fight battles or push on as victory is gained At the Battle of the Marne, an English surgeon, in charge of a hospital near the front by which the armies surged in haste, told me that in the early days there were constantly large numbers of footsore men in every company, sometimes 25 or 30 per cent These men were inefficient, if not an actual burden

Being impressed with the large numbers of nurses who had to be temporarily relieved of duty in the course of their training in a large general hospital on account of foot strain, the writer began many years ago to examine the feet of all probationers as a routine when the classes entered Suggestions as to shoeing and any necessary immediate treatment, etc , were made on the basis of this examination, and on the basis of the muscle balance tests, by which potential trouble may be discovered By this method it was possible to actually eliminate foot strain from the causes of disability among the nurses who followed instructions In armies the soldiers *must* follow instructions

We believe that careful tests of this sort would more than compensate for the time consumed by the discovery of potential but correctable faulty weight bearing and the assurance of more constant and continuous efficiency when severe tests came

The American army shoes, as far as we have been able to ascertain, are vastly better than those of many other nations, and several of the so-called army shapes leave little to be desired It was most satisfactory to pick out an unusually good shoe from among hosts of bad ones which the patients in a French hospital were wearing, and to find that this was an American shoe and was being supplied to certain of the French soldiers

No care can be too detailed as to the fit, shape and quality of soldiers' shoes Battles may be lost or won by shoes alone In a questionnaire conducted by Dr Smith Peterson and the writer at the American Ambulance in Paris, many more than half of the 200 soldiers under investigation had suffered from blisters and other more serious foot troubles caused by faulty fitting and faulty fashioned shoes A man may not fight at his best with a blister on his heel

ORTHOPEDIC SURGERY IN A BASE HOSPITAL

The opportunities for preventive orthopedic surgery have not ceased when the base hospital is reached They have hardly begun The wounds of the war are nearly all infected Healing is delayed, and contractures and adhesions are almost certain to occur, unless these dangers are appreciated and future function striven for quite as strenuously as the healing of the wound

Ankylosis, after joint injuries with their accompanying infections, is a very common and unfortunate sequela, but the degree of this misfortune depends on attention to the position in which the joint stiffens and every joint may be said to have its position of choice For example, a stiff shoulder in 45 degrees of abduction, an elbow in 90 to 100 degrees of flexion, a knee in 20 to 30 degrees of flexion, are often not serious handicaps, whereas an arm glued to the side, a fully extended elbow, a knee flexed to a right angle, represent actual crippling and require an operation or a forcible manipulation, which, because of the previously septic nature of the wound, may not be without serious risk

I shall not discuss at length the problems of immobilization of joints and compound fractures of bones These matters have been considered in some detail in a previous paper, but I would remind you that no surgeon should be as well qualified to deal successfully with these problems as an orthopedic surgeon Mr Robert Jones has his great orthopedic base hospital at Alder Hey near Liverpool, Professor Lange his German orthopedic base at Munich Both these masters make trips to the front and instruct the surgeons in the orthopedic technic of splints and plaster, but unless we are much mistaken, in the other base hospitals of both these countries, and surely in the base hospitals which we observed in France, there is still very great opportunity for orthopedic endeavor, and this endeavor is sure to yield full compensation for labor

In our own experience we found plaster of Paris most adaptable for immobilizing even the septic compound fractures requiring constant irrigation Wide reinforcing bridges must, of course, span the open wound, and nice application must be had, but in hands familiar with its use it serves its purpose well The ingenious splints of Mr Jones, Dr Joseph Blake and other surgeons are also most useful, and the overhead suspension, or so-called Balkan splint, often used in combination with metal splints, adds greatly to the comfort of the patient and often facilitates drainage

Problems of Restoration of Function —The return of function in wounded and infected joints depends on many things first, of course, on the extent of the injury, and second, on the seriousness of the infection We have been impressed by the power of repair which the ends of bones possess and also by the considerable amount of resistance which the synovial membrane displays

It seems to us that conservatism should be practiced in regard to early excision of joints, and that multiple incisions and absolutely free drainage should be reserved for those cases which actually *do* need it We do not believe in making these incisions and providing this drainage in cases which *may* need it We are aware that occasionally we shall be sorry that we did not thus widely open and drain, but we are sure we shall many more times be glad when we simply wash out the joint thoroughly and leave only a tiny rubber tissue drain running into or down to the joint opening Joint function returns very quickly and perfectly if the latter procedure is successful, very slowly, or not at all, after the former

We need not emphasize the importance of massage and early gentle, active and passive motion to prevent the formation of permanent adhesions

Brisement force, which is usually resorted to if these early movements have not been carried out, is a most unsurgical procedure, and only rarely successful

There are now several very excellent universal mechanotherapeutic machines, both French and German, which, working on the principle of the pendulum, afford excellent opportunity for the slow but safe limbering out of joints and stretching out of muscular contractures The results which they accomplish are slowly gained, but they may be expected to be permanent and we know no shorter road

Operative Orthopedic Surgery—As the war progresses there will be no limit to the field of what may properly be called orthopedic operative surgery There is ample opportunity for its practice now, but with septic compound fractures, in which wide gaps of bone exist, grafts are obviously not advisable until the sepsis has thoroughly disappeared, and in stiff joints all experience teaches that no attempt should be made to perform arthroplastic operations until long after the septic process has been quiescent, how long may be found to vary with different germs Perhaps a year is not too long as a working rule

Many limbs are saved now that formerly would have been amputated, both because it is more possible to save them and save life as well, and also because the supply of artificial limbs bids fair to be so inadequate for some time to come In these limbs, position has often been sacrificed to life, and realinement will be necessary A further task and opportunity for orthopedic surgery is thus presented These are only a few of the tasks and opportunities

ORTHOPEDIC WORK WITH CRIPPLES

Apparatus—The cripple has a right to look to the orthopedic surgeon for an amelioration of his condition Much may be done by preventive and restorative surgery alone, much more may be accomplished by the added use of apparatus of one sort or another, supportive, retentive or corrective

The little book of Spitzy and Hartwich gives us an idea of the care with which these matters are being considered in Germany Not only adaptations of the standard types familiar to all orthopedic surgeons are required, but also various forms of inexpensive prostheses are in constant demand for both upper and lower limbs It would be hard to conceive of a more ample opportunity for exerise of mechanical ingenuity than that presented by the maimed limbs of the returning soldiers Even if funds were at hand, which they are far from being, there is apparently a completely inadequate supply of the modern expensive and complicated and not always durable forms of artificial limbs Once given the occupation, an inexpensive and adaptable makeshift can usually be planned and can be easily obtained

Occupational Training—This brings us to the consideration of the occupational training of cripples It is fitting that orthopedic surgeons should take the lead in organizing this work, as they have done in the past and are doing now in Europe

Here in America, although much has been accomplished, most of the cripples throughout the country are cripples still, and idlers instead of special wage earners There can be no question as to which state of being is of greater use to the nation, or as to which state is the happier state for the individual We should surely appreciate the importance of devoting much energy in our several communities to a rounding up of these interesting people and providing them, probably by state legislation, with vocational training This is a form of preparedness of which every pacifist must approve

We point with much satisfaction to a recent bill introduced into the Massachusetts legislature by Representative John L Monahan and just signed by Governor McCall, the provisions of which are as follows

> *Resolved,* That the board of education is hereby directed to investigate and report to the next general court, on or before the second Tuesday of January, 1917, what facilities exist in this commonwealth and what provisions have been made to give special training and instruction to persons who have suffered the loss of sight or loss or injury of limb or member and whose earning capacity has been destroyed or impaired by such injury, for the purpose of reestablishing of increasing the ability of such persons to earn a livelihood, and also to investigate and report what provision has been made or opportunity furnished for such purposes of training or instruction in other states and in foreign countries, and to include in its report a statement of the opinion of said board on the advisability of action on the part of the commonwealth to establish or extend means for such training and instruction, and also to submit drafts of such legislation as they deem necessary to carry into effect their recommendations

The American Orthopedic Association at its last executive session appointed a special committee, of which Dr J E Goldthwait is chairman, to consider ways and means by which the orthopedic surgeons of the country may organize a national orthopedic reserve Detailed plans of an orthopedic base hospital are being worked out and sources of supply assured We urge most strongly the cooperation of this section, both officially and individually, with this committee It seems to us of great national importance — how great it may be, we trust we shall never know At the executive session it was recommended that a committee be appointed by the Chair, and Dr Goldthwait was appointed chairman of this committee also

We believe orthopedic surgery in times of peace is a most comprehensive specialty, in war time the possibilities of its helpfulness are still greater The fact that these possibilities are not always recognized should make orthopedic surgeons seek opportunities to demonstrate them If this opportunity is accepted it may well mark an epoch in the history of the specialty

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ABSTRACT OF DISCUSSION

Dr Nathaniel Allison, St Louis I succeeded Dr Osgood at the American Ambulance last summer In the early months of the war in Europe, I speak particularly of the French and Belgian sides, the hospitals were not adequately prepared, and the surgeons comprehended little of what they had to do Supplies were not forthcoming General surgeons, medical practitioners—all the leading men in France, were called to the colors to serve in such ways as they could in inadequately prepared hospitals with no supplies The American Ambulance was in a fortunate position, having an excellent building, unlimited supplies, and being able to spend on the care of the patient about five francs a day from the donations that were made for the hospitals This is much more than can ordinarily be afforded in France Mr Frederick Villars, a war correspondent who has followed all the wars that have occurred in the last thirty years, said that the American Ambulance was the best military hospital that the world had yet seen

The thought this brings up to us is what we would do for the care of tremendous numbers of wounded, if war should come suddenly on us The more or less of a catch word we all are using, "preparedness," is apt to be only a catch word, unless things are taken quite seriously These men come in in hundreds and thousands, and they must be taken care of, and their wounds are of the most severe character The American Ambulance, in its first year, treated three thousand patients, with a death rate of 8 8 per cent In This compares very favorably with any municipal hospital That shows the first year they did only eighty amputations That shows what orthopedic surgery—the hospital was practically an orthopedic hospital—has done No one thought of anything but conserving the limbs to the best function that could be obtained for them Everyone tried to devise means to conserve them, and in that way these very original and valuable appliances that Dr Osgood has shown you have come into use

Some provision should be made in this country for taking care of tremendous numbers of wounded I hope that we shall never have need to have such measures put into effect, but if we should the need will come suddenly and not after months of preparation The American Orthopedic Association, to this end, appointed at its meeting in Washington, D C a committee to standardize some notion of what orthopedic surgery could do in case such a condition should arise with us, and I would suggest that this section might also appoint such a committee

Dr Eben W Fiske, Boston My experience was perhaps, a little different from that of Drs Osgood and Allison Dr Osgood said that preventive orthopedics had hardly begun when the base hospital was reached and this is very true But on the other hand, orthopedic surgery is as essentially prophylactic as it is reconstructive, and nowhere is this truer than in its application to the surgery of war How large a proportion of the cases in Europe which are today requiring late treatment for deformities were preventable no one can say Of course, lack of time and material, and the presence of wide-spread infection, make it very difficult to carry out these measures, yet even with the first dressings certain knowledge of the mechanics of fractures must be employed, and all the way back, long before the base hospital is reached, there are innumerable opportunities for the application of orthopedic principles toward the prevention of deformity and the preservation of function Naturally in the most severe injuries we must first preserve the limb, if not the life, with the establishment of full drainage Second in importance is immobilization and lastly alignment and orthopedic principles In the moderate injuries, however, which furnish the largest proportion of cripples we can do a great deal It is as easy, for example, to put up a wrist in dorsiflexion as in any other way, yet it is not always done Again, among the minor injuries, the necessary rest and relaxation of the exact structure damaged, to be obtained by orthopedic measures, is greatly neglected, although this would often prevent the patients' transfer back to the base, a matter of extreme importance in keeping the maximum number of men in active service Dr Osgood advised the use of plaster-of-Paris and I think from his experience he is fully justified But in many of these early purulent conditions, it has been the experience of many good observers that splints are superior to plaster because, provided the immobilization is perfect, the splint is usually cleaner and gives more chance for drainage and dressing, it allows observation of the limb for spread of infection or gangrene and control of the secondary hemorrhage, and for early massage and manipulation But the choice of the splint is very important Traction and coaptation together are undoubtedly the ideal method of putting up fractures of the extremities, but traction with the body weight as a counterforce is not ideal, because every movement of the body creates spasm, so prejudicial to the comfort and safety of the patient Pull and counterpull within the splint is ideal and is so used throughout the English army, after the Thomas method It is also adapted to the arm, with the counter-pressure by a padded ring against the chest wall A material now generally used is an aluminum alloy rod, which can be easily bent cut or spliced and can take the place of any splint even the Thomas I want to call this splinting to your attention because I feel that orthopedic surgeons in this country should be familiar with a material that is so universally applicable and valuable in war surgery

Dr. J D Griffith Kansas City Mo I want to second the suggestion Dr Allison made that we should have a committee appointed from this section, such as was appointed from the American Orthopedic Association, for the purpose of helping us in being prepared for an emergency To one who has been along the line the absolute unpreparedness of this country is apparent We ought to be prepared thoroughly

Dr Joel E Goldthwaite, Boston The committee of the American Orthopedic Association was appointed with the idea of trying to standardize, or decide what is the best equipment for an orthopedic base hospital, or what material should be used in any hospital unit which might be established, whether a general or special orthopedic unit It was also thought possible to have the members of the Orthopedic Association and all the men in the country who are interested in orthopedics get together, so as to be made available for service in case of need The committee consists of Drs Allison Henderson, Forbes, Erving and myself Already General Gorgas has been written to, and the plan put before him, and he is most cordial in his wish to have the thing go on It is a part of the committee's expectation after they have worked out what is necessary for an equipment of a unit, to have such collections of material stored in different parts of the country ready for use, these storage places to be known to the National Academy, and also to the army All of us must feel that the great need is for our doing something that will put us in a position very different from what most of the nations abroad were in when the war begun Then too, it is not only in the time of war that opportunities of this kind are available When the war is over there will be an opportunity to get orthopedic experience, for hospitals are being established to help those who have been crippled It is the hope of the committee that any of the men here wishing to join an orthopedic unit will communicate with the committee The committee will send letters to all those doing work in our specialty, but in case they should not hear on account of error in the mails we should like them to send a statement of their age, experience, whether married or not, etc, to the committee We can have the names classified so that the government will have men fitted for different kinds of service Some could go to the front, others could go to the base units It will help the committee if you will do this

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A PLAN OF TREATMENT IN INFANTILE PARALYSIS[*]

ROBERT W LOVETT, M D

BOSTON

The successful treatment of infantile paralysis requires that the surgeon should have in his mind a definite plan covering all the phases of the disease, a plan based on the pathology in its various phases We have at the outset a virulent acute affection with a high mortality, then comes a period of two years during which we try to restore to their highest efficiency the affected muscles, and finally we meet in the later and so-called stationary stage of the affection the question of correcting deformity and restoring or improving function by operative measures Few affections offer a wider range of requirements from a therapeutic point of view, and if when we are treating the first stage we bear in mind what may happen to the patient in the third stage, we shall treat the early stages better

The muscle test spoken of in the paper is a means of quantitatively estimating the strength of muscles by means of their pull against a spring balance, and is not only useful in locating the existence of weakness in different muscular groups, but offers a means of estimating the gain or loss in muscular strength under given conditions[1]

The stages of the disease are as follows

1 The stage of onset begins with the acute attack, and may be assumed to end when the tenderness has

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[*] Read before the Section on Orthopedic Surgery at the Sixty Seventh Annual Session of the American Medical Association Detroit June 1916

[1] Martin E G and Lovett R W A Method of Testing Muscular Strength in Infantile Paralysis The Journal A M A Oct. 30 1915 p 1512

disappeared, a duration in general of from four weeks to three months A hemorrhagic myelitis is present, widespread, and affecting chiefly the centers of motion The centers of sensation are also involved, the posterior root ganglia in experimental pathology showing the first changes, and the existence of tenderness must be accepted as evidence of an active process in the spinal cord During this tenderness it is not physiologically reasonable to excite the peripheral connections of the affected nerve centers by massage and electricity The former at times causes great increase of pain and soreness, and has nothing to recommend it at this stage, and there is no evidence whatever to show that electricity is of any value at this stage Rest is the physiologic requirement, and the method of treatment that in practice works best, and the growing tendency to omit meddlesome therapeutic measures at this stage is hopeful There is evidence that the use of hexamethylenamin in monkeys diminishes the risk of infection, but has no effect after the paralysis has occurred, and as the drug in moderation is harmless, it is extensively used in this stage There is no serum or drug or proceeding that is known to abort the affection or limit the paralysis, although Netter of Paris has administered intraspinal injections of the blood of recovered persons with, he believes, benefit, but only in a small series of cases, and the proceeding is as yet wholly in the experimental stage

During this stage the patient should be kept quiet Joints will not stiffen, hopeless muscular atrophy will not occur, and by this proceeding the damaged cord will have the best chance to repair, and repair to the highest degree is desirable

Deformities should be prevented by keeping the feet at right angles to the legs to avoid the most common deformity, a dropped foot Toward the end of this period immersion in a warm salt bath is desirable and permits a degree of exercise to the affected limbs Scoliosis begins frequently in this stage, and is often overlooked

2 The second stage, or phase of convalescence, may be assumed to begin with the disappearance of the tenderness and to last for two years or more, at the end of which period the disease has become more or less stationary The pathologic condition at this stage formulates the treatment The hemorrhagic myelitis is subsiding, the perivascular infiltration which has blocked some of the spinal arteries is being absorbed, and these cells are resuming their function little by little, inflammatory products are being absorbed, and the clinical manifestation of these processes is expressed in what we all recognize as "spontaneous improvement," which begins when the tenderness disappears and lasts almost indefinitely, diminishing in its rate as the months pass[2]

The clinical manifestation of the pathologic process is a motor impairment of muscles, widespread and in general erratic, more often a weakening than a complete paralysis In the Vermont series of cases,[3] manual examination of muscles showed the proportion between partial and total paralysis to be as 2½ 1, and the more delicate muscle test,[2] which detects slighter grades of weakening, found the proportion to be as 9 1

Our problem at this stage therefore is to restore the maximum function to affected muscles, and to study carefully the measures most likely to accomplish this end This point of view becomes especially important when we realize that muscular weakening is much more common than complete loss of power It is a very important matter to the patient with a gastrocnemius muscle with only 20 per cent of the normal power whether that muscle ultimately regains 40 per cent or 90 per cent of its proper strength

It becomes necessary then to consider those measures which are likely to prove most useful in bringing about the maximum improvement, and to comment on conditions likely to prove detrimental

AMBULATORY TREATMENT

When the acute stage is over it is on the whole desirable to get the patient on his feet, that is, to institute ambulatory treatment Prolonged recumbency is for a child unnatural and undesirable physiologically and mentally The sitting position not varied by the upright position is of all most likely to lead to flexion deformity of the hips and knees and to dropped feet The upright position induced by ambulatory measures is desirable not only because it antagonizes the conditions mentioned, but because the effort to balance on the feet instinctively excites to effort a large number of muscles not otherwise to be reached, and is a valuable form of "muscle training," a therapeutic measure to be mentioned later On the other hand, this method is open to the objection of possibly fatiguing convalescent muscles and some authors advocate prolonged recumbency In my opinion, the ambulatory method with proper avoidance of fatigue is on the whole the best to be pursued at the end of two or three months

If the patient can walk without braces, so much the better If apparatus is needed to permit ambulatory treatment it should be used, but worn only in walking and in early cases not continuously The most commonly required form of apparatus is the Thomas caliper splint, which serves to keep the knees straight Crutches may or may not be required A good general rule with regard to apparatus is that it should be used when the patient cannot stand without it, or if in standing or walking a position of deformity is assumed, because deformity leads to stretching of soft parts, and if persisted in to permanent bony changes

The two conditions most frequently overlooked which lead to serious results are weakening or paralysis of the abdominal muscles and scoliosis In the writer's opinion when these occur the use of a cloth corset or plaster jacket is imperative from the time that the first stage is over

A patient who has been long in bed when first put on his feet is often unable to balance even if he has sufficient muscular strength, and the problem of cultivating equilibrium in these cases must be taken up by itself and patiently persisted in

Having thus formulated the matter of ambulatory treatment, the question next arises as to those therapeutic measures which are likely directly to have a favorable effect on the muscles These are (1) massage, (2) electricity, (3) heat, and (4) muscle training

1 Massage is of value because it empties the veins and lymphatics and thus promotes the flow of blood to the limb, and because it apparently retards muscular atrophy and promotes muscular tone More than this however, is not to be expected of it It does not promote the passage of nervous impulses from brain to muscle, and its action must be considered purely local Given roughly or for too long a time it is detrimental

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[2] Lovett, R W, and Martin, E G Certain Aspects of Infantile Paralysis, The Journal A M A, March 4 1916, p 729

[3] Lovett, R W The Treatment of Infantile Paralysis, The Journal A M A, June 26, 1915, p 211

and retards progress, and its overuse is probably responsible for much harm

2 Electricity has been much discussed, and in the absence of definite data one must fall back on personal experience Faradism causes a mild muscular contraction, and may be a useful form of gentle exercise It is disagreeable, and to young children often a source of terror The galvanic and newer forms of currents are assumed to have a beneficial effect in general, but in many years' experience in treatment with and without electricity (used often on one side of the patient only with the other side as a control) the writer has never been able to satisfy himself in a single case that it was of any value Certain recent experimental work on the retardation of atrophy in denervated muscles is of interest[4]

> It is practically certain that if electrical stimulation has a beneficial effect, the optimal effect will be with that current which is strong enough just to cause contraction In the ordinary methods of stimulating muscles through the skin, whether by unipolar or bipolar methods, with currents of long or short duration, the intensity of the current is much greater in the superficial than in the deep fibers, and we think it doubtful whether the latter can be stimulated without using currents injurious to the former

That the use of electricity has done much harm is undoubted, because not only is the use of strong currents admittedly injurious, but the routine use of electricity often deludes the physician and parents into thinking that the child is receiving adequate treatment while measures of admitted value are neglected

3 Heat is of value either as radiant heat from electric bulbs or by some form of oven, because it raises the temperature of the limb, and thus offers more favorable conditions for muscular contraction, and because it stimulates the flow of blood to the limb

4 Muscle training is in the writer's opinion the measure of the greatest value at this stage, and this stage is important because however operative the surgeon may be he will during these two years use nonoperative treatment

Muscle training attempts to drive an impulse from brain to muscle to enable it if possible to open up new paths around affected centers in the cord The connection between these centers with each other and between the centers and the muscles is most extensive and complex,[5] and the facts given as to the predominance of partial paralysis show that as a rule the entire nervous control of a given muscle is not wiped out as a whole, but only in part On this basis rests the claim of muscle training, a measure which in the opinion of the writer is one of the most powerful factors in determining ultimate muscular function

As to the efficacy of this treatment, the following data were observed in Vermont by means of the muscle test The period covered was three months

> The chance of improvement in affected but not totally paralyzed muscles under expert treatment by muscle training was about 6 to 1 under supervised home exercises 3 5 to 1, under home exercises without supervision 2 8 to 1 while untreated affected muscles in these patients showed an improvement ratio of 1 9 to 1 These figures represent cases at the end of the first year They are all from the Vermont group and were treated there

In order to determine just what might be expected from the treatment by muscle training an analysis was made of the progress of all patients in my private practice during the past winter who had had two successive muscle tests at times widely enough separated to warrant any conclusions as to their progress No cases were omitted, and the patients, as indicated in the accompanying table, are divided into two classes, those coming daily to the office for treatment by an expert assistant, and those whose treatment by muscle training was prescribed at the office but carried out at home by some unskilled person

One difficulty presented itself in the analysis Certain cases were regarded as having no power at all at the first examination, and in these cases for purposes of computing it was assumed that the children had power of one-eighth pound, not sufficient to move the scale It was found that a child with one-fourth pound of muscle power would, however, move the scale, and these were the ones that were noted at the initial observation as having a trace of power The percentage gain of each muscle was then reckoned, and the figure given in the table represents the average percentage of gain of all the muscles If the paralysis was unilateral, the per cent of gain in the unaffected limb was deducted from the gain of the affected side and only the excess counted

RESULT OF MUSCLE TRAINING

Age	Time Since Attack	Interval Covered by Tests	Average Total Gain of Affected Muscles per Cent	Average Monthly Gain of Affected Muscles per Cent	Apparatus Worn	Region Recorded
Patients treated daily at office by skilled assistants						
22	1 mo	6 mos	197	24	Sling	Arms
8	3 mos	5 mos	82	16	Corset crutches braces	Legs
9	3 mos	6 mos	146	21	None	Legs
9	21 mos	10 mos	200	20	Plaster jacket crutches braces	Legs
14	4 mos	4 mos	658	172	Corset braces crutches	Legs
8	15 mos	7 mos	702	100	Corset braces crutches	Legs
8	3 mos	6 mos	184	30	Corset	Legs
Patients treated at home by relatives or nurses (unskilled)						
10	1 yr	6 mos	13	2	High heels	1 leg
30	5 mos	1 mo	44	44	Sling	1 arm
24	6 yrs	3 mos	12	4	None	1 leg
10	2¼ yrs	8 mos	108	13 5	Corset plate	1 leg
11	6 yrs	5 mos	89	17	Plaster jacket braces	Legs
4	1 yr	7 mos	30	4	Brace	1 leg
11	9 yrs	2 mos	33	17	None	Arm and leg
10	3 yrs	4 mos	16	3 5	High heel	1 leg
10	5 yrs	7 mos	None	None	High heel	1 leg
14	8 yrs	8 mos	67	8	Plaster jacket brace	1 leg
16	2 mos	3 mos	620	206	Brace and crutches	1 leg
8	1 yr	7 mos	202	28	Braces and corset	2 legs 2 arms

Deformity occurs in many forms, but the therapeutics of it are easily formulated In the earlier stages it is generally to be avoided by preventing persistent malposition If fixed deformity exists it must be removed before undertaking treatment, nonoperative or operative The neglect of this rule is one of the most frequent causes of failure of treatment Deformity is corrected by stretching by hand, by plaster or by apparatus, by forcible stretching under anesthesia, by tenotomy, fasciotomy, myotomy or osteotomy, the mildest measure that will suffice being the soundest and best

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[4] Langley and Kato Jour Physiol 1915 xlix 432

[5] Bing Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord New York 1909

Stretched muscles are at a great disadvantage so far as recovery goes, as pointed out years ago by Charles Fayette Taylor, and later by Robert Jones The best example of this is in gastrocnemius paralysis, most efficiently treated when it exists alone by very high heels, throwing the muscle out of use and preventing stretching

Fatigue and overtreatment by massage and exercises are detrimental factors of the highest importance too little attended to This has been especially brought out by the studies by means of the muscle test, which have shown that a surprisingly small amount of exercise was detrimental to convalescent muscles, and in some muscles returning power has been wholly abolished by overuse The advice often given to use affected limbs as much as possible is in the opinion of the writer the worst advice that can be given It is difficult to underuse such muscles, but fatally easy to injure them by overuse

3 The third stage is generally called the stationary stage, and begins about two years after the onset The requirements of the preceding stage as to the care of the muscles, etc, still exist, but are less urgent In cases which have not been properly treated earlier, muscle training may accomplish much, even in cases of long duration The requirements as to apparatus remain much the same throughout

The dominant requirements of this stage are operative, and are first the correction of deformity, a matter already discussed, and second, operations to improve function and secure stability

Operations to improve function are by all experienced surgeons deferred until at least two years after the onset (and by some men several years) in order to permit recovery of muscular power to become as great as possible and to enable the mechanical conditions in the affected limb to become clearly defined before operating

Tendon transplantation[6] is the most brilliant of these measures It implies the existence of one comparatively normal muscle in the region to be operated on Simple operations have replaced complicated ones, periosteal insertion is used, silk extensions are in common use, tendons are passed in the subcutaneous tissue, and prolonged after-treatment is the rule, unrestricted use not being allowed under one year from operation

Nerve transplantation,[7] which is the other operation to improve function, has not been generally used because the most skilful operators in this field have not reported a large proportion of satisfactory results, and also for the reason that the operation is advised at so early a period in the disease

OPERATIONS TO IMPROVE FUNCTION

Arthrodesis[8] has lost favor because of the entrance in the field of operations yielding better functional results, and the most experienced surgeons do not favor it in the ankle until after late childhood, if at all At the knee it is always questionable and dangerous in early childhood In the hip it is desirable, but often unsuccessful

Astragalectomy,[9] on the other hand, has gained in favor, and although originally introduced by Whitman only for talipes calcaneus, it is now widely used where arthrodesis would formerly have been performed A transverse section of the foot devised by Davis[10] deserves mention as being useful in calcaneus deformity

Silk ligaments[11] are used because silk left in the tissues becomes coated with fibrous tissue and serves as a ligament This is especially used to correct the dropped foot by passing several strands of silk anteriorly from the tibia to the tarsus It is a brilliant operation when successful, but has often failed, probably because too little silk has been used In a child of 8 or 10 one should use six to eight strands of No 12 silk

Tendon fixation[12] or tenodesis has lately been revived by Gallie, and is extensively used The paralyzed tendons are sewed into grooves in the bone, thus being transformed into ligaments, to correct deformity and check excess of motion Stretching may occur, but the operation seems to have a field of usefulness

Two of these operations are frequently combined, as, for example, tendon transference and silk ligaments, and similar instances

SUMMARY

This paper is a plea for a definite uniform plan for the treatment of infantile paralysis in all of its stages, for a direct attack on the disease based on its pathology, and for persistency and precision in that therapeutic attack, with special care as to the avoidance of fatigue from overexercise or overtreatment It is the belief of the author that nowhere in orthopedic surgery does the difference between the best and indifferent treatment have more effect on the ultimate result than in this disease

234 Marlborough Street

ABSTRACT OF DISCUSSION

Dr. E W Ryerson, Chicago There is no question about the value of the muscle training as advised and perfected by Dr Lovett It is, however, unfortunate that so desirable and important a method of treatment should be so difficult to apply in most of our large clinics It is not so difficult in private practice, where we have specially trained and paid assistants, but it is very hard to obtain voluntary service in our free clinics For that reason, in my experience, this method of treatment has been very much neglected The use of electricity has been, very properly, frowned on by the author His experience corresponds exactly with my own While electricity will always assume a certain position in these cases, because we hope that it may do some good, I know of no one who has done much practical work in this line who will enthusiastically claim very much value from its use

The operative treatment, as described by Dr Lovett is of great importance, for the reason that we shall always be confronted with a large number of cases in which no other method of treatment has been used, or perhaps could be used I formerly advocated the use of silk in the form of ligaments and tendons During the last few years, however, I have not been so confident that this was the ideal method of treatment, for the reason that there is a certain element of uncertainty in the use of silk I have seen cases in which the silk acted as a foreign body—perhaps very long after the operation—and had to be removed, and in which the fibrous tissue that had been deposited around the silk was apparently not strong enough to do the work that we had expected the silk to do Hence, we are inclining toward tendon operations and fixation, especially in the line of astragalectomy This, in the field of marked deformity, will always be the routine treatment combined with tendon fixation and tendon transplantation

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[6] Lange München med Wchnschr, 1902, No 1 Ztschr f orthop Chir, xxix, Ztschr f ärztl Fortbild., 1905 22 Vulpius Deutsch med Wchnschr, 1912, xxxvi Lovett Boston Med and Surg Jour, 1910

[7] Spitzy Handbuch der Kinderheilkunde Lange and Spitzy, Leipzig, 1910, p 310, Ztschr f orthop Chir, xiii Osgood (review) Boston Med. and Surg Jour, June 30, 1910 Vernicchi Arch di ortop, 1910 xxvii, 337 Kilvington Brit Med Jour April, 1907 Deroux Lyon chir, December, 1912

[8] Jones, Robert Tr Int Cong Surg., 1909, xvi

[9] Whitman, R Ann Surgery, February, 1903 Am Jour Med Sc November, 1901 October 1913, p 249

[10] Davis, G G Am Jour Orthop Surg Ztschr f orth

[11] Lange München med Wchnschr, 1906, lii, Chir xvii 266

[12] Gallie Am Jour Orthop Surg, January 1916

Dr. H W Frauenthal New York Some years ago I started an orthopedic clinic in New York in which I treated bad cases of infantile paralysis of more than three years' duration Many men are not sufficiently familiar with what massage and electricity can do when you do not overdo it In the last year, I have had as patients a number of adults who had been troubled for more than ten years and I hope to show the result at the next meeting of this section

Dr F C Kidner Detroit I, too was very enthusiastic about silk ligaments three years ago but I became less enthusiastic as time went on I still believe however that they have a very useful application as a help or a steadying factor, for a few months in connection with massage, electricity and other forms of treatment, but I do not believe that they hold very strongly

Dr. A H Freiberg, Cincinnati In reference to tendon fixation, we should go slowly The lesson that we should have learned in connection with our experience with silk ligaments is that caution should be observed in selecting this method of treatment The gentlemen who have just spoken have referred in the past to the very definite value of silk ligaments, and are now retracting these statements I wish to confirm what Dr Lovett said about the use of massage and electricity Every doctor who buys an electric battery tries electricity, but I am convinced that electricity, in itself, is an agent of no value in bringing about recovery or even considerable improvement in these cases On the other hand I am convinced that massage is of value, but I am also convinced that its value is not to be compared with that of muscle training The latter however has to be administered properly to be of benefit, and this demands experience

Dr. F J Gaenslen, Milwaukee I have done a number of cases of silk-ligament suspension, and in two of them there occurred a fracture of the tibia at the point of insertion of the ligament In one case, the silk had torn, and a subsequent silk ligament suspension was done, a long time after the first At the second operation, the drill-hole was placed a short distance above the first hole, but following a slight trauma a fracture occurred near the point of insertion The roentgenogram seemed to show osteoporosis about the point In another case in which there had been only one drill hole, the fracture also occurred at that point I suppose that osteoporosis was responsible for it, and wonder whether others may not have had the same experience

Dr. A. L. Fisher, San Francisco Three years ago I had the same feeling in regard to the value of electricity as those who have spoken but I have since seen the results secured by a man who had paid great attention to this method of treatment in Paris He uses a very weak interrupted galvanic current This does not seem to be important, yet in the two groups, treated prior and subsequent to three years ago, there is a contrast that shows that there is great benefit from this method of treatment Another, and more important method of electric treatment to use is the faradic current By it, you can get an idea of the quantitative amount of the muscle strength by using a given coil and getting the minimum amount of current that will elicit a response to the unaffected side and treating the affected side, using the same amount of current The proportion of muscle damage is practically in inverse proportion to the amount of current that it takes to get a response This, in the way of prognosis is extremely important

Dr J T Watkins San Francisco I have not had any success at all with the use of galvanism and faradism With regard to muscle building people living in the South and other distant parts of the country cannot go to New York for this training, so the work has to be turned over to persons who are sometimes expert, and sometimes not My experience is that the people who had been trained in Christiania or London, when dealing with very young children got practically no results from muscle building They did not seem to be able to convey to the children what was needed, so that they could do it themselves by mental impulses On the other hand when dealing with older persons or adults they obtained very remarkable results

Dr Walter G Stern, Cleveland Believing as I do in the value of massage and muscle training and also that overuse and overstimulation of the weakened muscles are especially harmful I hold that Dr Lovett is incorrect in his advice to us and through us to the general practitioner "to put the patient on his feet as soon as the acute symptoms have subsided because when you allow this you allow him to run the dangers of overuse and overexertion The patient makes his own efforts at walking, is stimulated by his parents to make further efforts and by the neighbors and friends to make still further attempts These efforts are all made through the contracture of the strong and healthy muscles which increase in proportionate strength to such an extent that soon overstretching of the weakened muscles takes place and they lose their tone This is one of the chief causes of deformity which we find so difficult to overcome later on Children should have, at least, a considerable period of rest after the acute stage, and during this time one can use muscle training and massage to good advantage The late Dr Townsend told us a few years ago that his best results in the first epidemic in New York were obtained with children who had been kept in bed for at least a year, Judson says eighteen months to two years but that seems to me to be entirely out of the question However, I believe that they should be kept quiet for a much longer period than Dr Lovett would have us infer from his printed statements

Dr. W R. MacAusland Boston I agree thoroughly with Dr Lovett s outline of conservative treatment, but I object strenuously to a statement made by him that the results of tendon transplantation and silk ligament fixation are 'brilliant ' These infantile cases demand stability and increased function I have seen silk ligaments that have produced deformities by holding too strongly or insecurely, and an endless number of tendon transplantations that have not held, so that the part was weaker than before the operation and the patient was distinctly hurt by the tendon transplantation I feel that with the exception of about one transplantation in the foot, there is but one operation to be done in these cases of infantile paralysis that can stand the test of time, and that is astragalectomy, as outlined by Dr Whitman

Dr Charles A Parker Chicago I believe that every man does the best work in his own hobby If he believes in operations he gets the best results with them, if he believes in the use of electricity, or in massage, or in a combination of the two he gets the best results with them Most of the deformities are in the lower extremities in infantile paralysis, and the best result that we generally get, after the patients have lost the finer movements, is to teach them to stand on and use their feet and legs for the support of their body In considering these different operations, one sometimes loses sight of the fact that the body should be straight in order to be stable The body should be straight over the hips the knees straight, and the feet at right angles These three conditions are the factors leading to the best results How to get them is answered differently by different men Some prefer tendon transplantation, some, astragalectomy and some, other means

Dr Frank E Peckham, Providence, R. I What do we want to obtain by our treatment? I may be wrong, but, personally, I feel that I want a fresh influx of blood to the paralyzed muscle How is that best obtained? It has been held as an opinion that we could not do much until the pain stage had passed, but I have found that I could begin treatment in the acute stage just as soon as I could have the child brought to the office I have begun even before the fever had subsided entirely You commence immediately by treating with applications of heat I use a five hundred candle-power electric lamp for twenty minutes, and I apply mechanical stimulation by vibration There is no pain caused by the treatment, and there is entire relief from pain in five minutes after the treatment is started The relief lasts for a while only, repetition of the treatment, however, makes it permanent I find that the cases improve faster in that way than when this method is not followed

In regard to electricity There are so many ways in which electricity may be applied that it is not fair to say that electricity is of no value without specifying just what method of application is meant, any more than it would be to state that drugs are useless without mentioning which drugs are referred to The use of electricity is understood by the general practitioner to produce muscle contractions Personally, I have not done that with it I think that electricity has a use, but we must decide just what we want to accomplish and then accomplish it The whole process should be stated in absolutely definite terms

Dr Roland Meisenbach, Buffalo I wish to lay stress on the value of apparatus in connection with cases of infantile paralysis, even in the earliest stage By a careful adjustment of the proper apparatus, one can assist muscles to return to their normal more quickly than without However, before the apparatus is applied, we must keep in mind the actual condition of the muscle, not only at the time when the apparatus is applied, but in the course of the paralyzed or paretic muscles The opposite can also be said about apparatus that is applied without any understanding of the muscle action I have seen an entire quadriceps regenerated in a child, and I know it was due to the fact that a duralumin brace had been applied properly and so regulated from time to time as the muscles became stronger that the opposing group of muscles had no opportunity to check the progress of the quadriceps Therefore, one should not apply apparatus unless he has a very thorough understanding of the individual muscular action Dr Lovett said that operation should be postponed until the third stage I believe it is true I think it is wrong to operate in the early stage The insertion of silk is not the proper method of treating infantile paralysis, for two reasons First, because it is not permanent, second, because it may check muscle exercise, and therefore prevent regeneration of one or a group of muscles There is no question that silk resolves If any one of you has had an opportunity to study cross sections of silk strands embedded in living tissue, you will see that after twenty days there is very little silk left, and in its place is connective tissue I am taking out many more silk ligaments than I am putting it

I firmly believe that apparatus, if applied carefully with Dr Lovett's idea of muscle education in mind, will give better results Stability is to be desired You cannot immediately get stability by operative procedure Where the attack of infantile paralysis is very mild, I have applied rubber muscles, as I chose to call them These could be adjusted in thickness and width corresponding to the afflicted muscles, whether they were in a state of paresis or total paralysis These acted as apparatus, and were sometimes combined with apparatus, especially in the early stage of infantile paralysis The rubber tissue over the involved muscle acted also by causing a hyperemia, and thereby stimulating circulation I cannot agree with Dr Lovett in his statement that the pathology of infantile paralysis changes so rapidly for the better I would like to ask Dr Lovett whether the afferent and efferent impulses have much to do with the rapid rebound in cases of infantile paralysis, and whether he can tell the percentage of gain in the given paralyzed muscle in, let us say, six months of paralysis

Dr Robert W Lovett, Boston I do not want to go on record as advocating extreme conservatism in the treatment of the disease If we can avoid operation, so much the better Dr Stern's criticism about getting the patients on their feet is a just one I intended to protest against allowing children to sit in a chair, month after month, and did not mean to imply that there should not be considerable rest In many cases, I do not allow walking at all I am satisfied that the element of fatigue is of great importance in all early cases, and I am getting better results since I have been paying greater attention to it I did not mean to advocate the insertion of silk ligaments over the other operative measures, but only as one of the operative procedures I have had failures in cases in which I have used it I now put in from six to eight strands of No 12 silk I do not know how this will work out in the end I hold no brief for it over astragalectomy It often has failed, but its results have often been brilliant The muscle test gives a quantitative test of muscle strength I believe it to be reliable I have been able to treat the cases better, because I could take tests of them in that way I believe that it is the means by which the question of the benefit of electricity can be settled I am starting on the observation of a set of cases treated with and without electricity in order to compare the two sets by quantitative tests Nine patients out of ten in my private practice during the last winter have had their muscle training under the mother or an untrained nurse The results under these circumstances were about one third as good as when given in my office by an expert

I must differ with Dr MacAusland about tendon transplantation I think it is a very good and at times a brilliant operation, although there are failures from its use, but the same may be said of astragalectomy I think that astragalectomy is suitable for one set of cases, while tendon transplantation is suitable for another set Tendon transplantation is especially suitable for cases in which you have tested the muscles and know just what you are doing Of course, if you substitute a very small muscle for one that is strong and heavy there is nothing in it, but if you test out the muscles beforehand, you can avoid this Therefore, this muscle test is in the line of precision It has shown me how little I knew about the disease Dr Meisenbach's questions I cannot answer The tendency of my paper is not to advocate any particular method I merely wished to state my personal experience and to make a plea for a greater precision in the treatment, advocating a plan based on the supposition that there will be two years of nonoperative treatment What operative treatment we should employ is a separate question

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SPECIFIC TREATMENT OF INFANTILE PARALYSIS

PRELIMINARY NOTE

ABRAHAM SOPHIAN, MD
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Epidemics of infantile paralysis since 1907 have afforded opportunity for careful clinical as well as laboratory study In the present epidemic of infantile paralysis in New York, large numbers of patients with acute cases have been removed from their homes to the city contagious hospitals In the Kingston Avenue Hospital at the time of this writing there were over 300 patients

As a member of the committee in charge of these cases, assigned in charge of the treatment during the acute stages, I had a p[illegible]rly good opportunity to select different types o[illegible] ase at different stages, and to make comparat[illegible] ti[illegible] helped in deciding the value of t[illegible]

It is manifestly diffic[illegible] ertainty of the value of any [illegible] se like infantile p[illegible] in wl[illegible] pre- paralytic [illegible] diffic[illegible] in which the [illegible] is [illegible]

Our act[illegible] nt symptoma[illegible] ing which properly used should do no harm, and which should theoretically do good is worth using, at least till we get something better

The analogy, etiologic, pathologic and epidemiologic, between infantile paralysis and epidemic meningitis is very close The symptoms of infantile paralysis, as in epidemic meningitis, may be grouped into those caused by (1) hydrocephalus, (2) the inflammatory reaction in the meninges and nerve substance, and (3) paralysis — due to focal involvement of nerve tissue

The successful treatment of epidemic meningitis depends on the proper relief of hydrocephalus, and the injection into the spinal subarachnoid space of an immune serum which bathes the inflamed parts, produces a local leukocytosis and through its opsonins causes a sharp phagocytosis

Treatment along similar lines should theoretically be of value in infantile paralysis

The treatment of infantile paralysis may be divided into (1) relief of hydrocephalus, (2) intraspinal injection of serum, normal human, normal horse, or convalescent, (3) control of special symptoms, as respiratory paralysis, (4) symptomatic general treatment, and (5) orthopedic treatment

1 RELIEF OF HYDROCEPHALUS

Hydrocephalus with its pressure symptoms is most pronounced during the acute stage In most cases it is only moderate, but not infrequently, especially in the cerebral cases, it is quite pronounced In the latter the patients are often very stuporous, with twitchings, convulsions and respiratory embarrassment Paralysis of the respiratory center is the usual cause of death in infantile paralysis Early relief of respiratory embarrassment is therefore important One lumbar puncture usually suffices, but in some cases it must be done several times till relief is permanent

The following case history will illustrate

Case 1 —A. K, girl, aged 2 years, was admitted to the hospital on the fourth day of an attack of infantile paralysis Her condition was bad She was in profound stupor, was cyanosed, and respirations were very irregular, of Biot's type Macewen's sign of hydrocephalus was marked There was paralysis of left face and both lower extremities By lumbar puncture, 60 c c of clear fluid under very high pressure were removed, 8 c c of normal horse serum were injected Twelve hours later, the child was much improved but still drowsy, and the respirations were still irregular Macewen's sign was marked By lumbar puncture, 50 c c of fluid under very high pressure were removed Two hours later the child was bright, taking the bottle well and breathing well Convalescence was uninterrupted from that time on

Relief of hydrocephalus is an important therapeutic measure In cerebral cases it is often urgently indicated It is quite safe to remove fluid till the pressure drops to the normal

2 INTRASPINAL INJECTION OF SERUM NORMAL HUMAN, NORMAL HORSE OR CONVALESCENT

A highly immune serum for poliomyelitis is what we want So far such serum has not been produced

The beneficial results of immune antimeningitis serum therapy have been attributed to a number of factors — the opsonic action of the serum, the stimulation by the serum of a local and general hyperleukocytosis, and the antitoxic, bactericidal and agglutinative action of the serum Is the hyperleukocytosis, local and general, altogether a specific reaction, produced by the immune serum? I do not believe it is It is a common experience to inject patients with meningitis, suspected as being meningococcic (of the epidemic type) with immune antimeningococcic serum Cases which later proved to be poliomyelitis, tuberculous meningitis, toxic meningismus and syphilitic meningitis have been so treated A cerebrospinal fluid, obtained twenty-four, or sometimes forty-eight hours after such injection of serum, is often turbid, and shows a marked hyperleukocytosis with relative polynucleosis, a reaction frequently observed in true cases of epidemic meningites treated with immune serum The local hyperleukocytosis is, I believe, to a very great extent a nonspecific protein reaction

We thus have a simple, almost harmless means of producing a hyperleukocytosis in the cerebrospinal fluid Normal horse serum and normal human serum can be easily procured, and if sterile and properly injected are harmless

The objection to horse serum would be the sensitization to foreign protein, heretofore, if available, normal human serum would be preferable

Epidemic infantile paralysis is not a virulent disease, with a tendency to progress unfavorably It is the very opposite The febrile and inflammatory stage is a short one, and the lesions usually appear early in the disease and in most instances do not spread further The mortality is relatively low, averaging during the height of epidemics from 20 to 30 per cent, but usually much lower It is a disease against which we have very high natural immunity, as evidenced by the very small percentage of all exposed who actually develop the disease

It has been found that the production of a general hyperleukocytosis is a most important therapeutic measure, as recently pointed out in the treatment of typhoid fever by the intravenous injection of sensitized vaccine and other nonspecific proteins Similar observations have recently been noted in the treatment of arthritis by the production of a hyperleukocytosis after nonspecific foreign protein injection The importance of producing a hyperleukocytosis in the cerebrospinal fluid in the treatment of epidemic meningitis has long been known

The probable value of a hyperleukocytosis in the cerebrospinal fluid in poliomyelitis, a disease produced by an infectious agent of relatively low virulence, should be considerable In order to be of most help, the serum would have to be used very early in the disease, during the acute inflammatory stage, if possible in the preparalytic stage, especially if prevention of paralysis and abortion of the disease is hoped for The active, acute inflammatory stage of the disease is so short that it is often impossible to inject more than one dose of serum in the important early stage Serum injected intraspinally should be injected under the usual precautions of strict asepsis, and control of the dose by coincident blood pressure observations

In view of my previous experiences with the injection of horse serum in different central nervous system infections, I felt that the measure should certainly be given a thorough trial in the present epidemic In 1912, I had occasion to use the treatment in two cases, with results which were encouraging

The present preliminary report is based on only a small series of cases In view of the harmless nature of the treatment and the general encouraging results, I felt it important to make this a preliminary report at this time

A series of ten patients were treated with normal horse serum Unfortunately most of the cases admitted to the hospital were late cases, but a few of the early cases showed interesting results

The following case histories show the results in different stages and types of the disease

Case 2—G A, boy, aged 3 years, ill forty-eight hours, was admitted in the early stage with general meningitic symptoms, high fever, 105 F, and a slight facial paresis Sixty c c of cerebrospinal fluid under high pressure were removed by lumbar puncture Fifteen c c of normal horse serum were injected

Examination of the cerebrospinal fluid gave typical findings Eighteen hours later the temperature was normal, and the patient much improved in every way but still drowsy Forty-eight hours later he was still drowsy, and slept most of the time Macewen's sign was marked Temperature was 101, and rigidity of the neck was again distinct By lumbar puncture 30 c c of cerebrospinal fluid were removed, and 10 c c of horse serum injected Eighteen hours later the condition was about the same Thirty-six hours later there was decided improvement Forty-eight hours later the boy was convalescent, seven days after the acute onset No paralysis developed

Case 3—Child, aged 3 years (Bridgeport hospital), ill forty-eight hours, was in the acute meningitic stage, with no definite paralysis, but pronounced symptoms of acute meningeal irritation

Diagnostic puncture of cerebrospinal fluid under high pressure gave typical findings Two hours later about 15 c c of cerebrospinal fluid were removed by lumbar puncture, and 15 c c of horse serum injected Twenty-four hours later the temperature was down and the child much better Forty-eight hours later the child was convalescent, with no paralysis, and recovery was uninterrupted

A number of patients under treatment with late cases appeared to show much more improvement than is seen in cases clearing up without any treatment It should be noted, however, that some cases, even with considerable paralysis of limbs, face or throat, clear up within a period of a few days without treatment of any kind Judgment of results under curative treatment must therefore be based on comparative results Results from curative treatment in the late cases could be expected only where there was no destruction of tissue

Case 4—Girl, aged 9 years, ill one week, was still very irritable, and evidence of acute meningitic irritation was still present There were marked anteroposterior spasm of the neck, and spasm and tenderness of the back Macewen's sign was marked Diplegia was complete Sixty c c of clear fluid under high pressure were removed by lumbar puncture, and 15 c c of normal horse serum injected

Twenty-four hours later the patient felt better and was less irritable Rigidity of the neck and back had improved She could move with greater ease

Forty-eight hours The patient felt good, and could sit up Opisthotonos was gone

Seventy-two hours Rapid improvement continued, some power had returned to both limbs The patient sat up and moved with freedom

Five days later the child was convalescent Diplegia was present, but some power had returned to the limbs, which were growing stronger There will probably be partial permanent diplegia

Case 5—Child, aged 4 years, with disease of twelve days' duration, had paralysis There were diplegia and paralysis of the right upper extremity Evidence of acute meningeal irritation was still present, the patient was very irritable, anteroposterior spasm of the neck and Kernig's sign were marked, respiration showed occasional intermittence general condition was only fair Forty c c of cle under high pressure were removed by lumbar puncture, and 12 c c of serum injected

Eighteen hours later, the child was much brighter, and less irritable Rigidity of the neck was almost gone The general condition was better

Two days later, improvement continued, power was beginning to return to the paralyzed limb

Four days later, the improvement continued steadily, considerable power had returned to the paralyzed limb

The immediately favorable response in this case might, to a very great extent, be attributed to the relief of hydrocephalus, but the coincident improvement in the paralyzed limbs suggests favorable action of the serum

Case 6—Child, aged 1 year, was admitted to the hospital on about the fourth day of illness, with right hemiplegia, repeated general convulsions, and continuous clonic convulsion of the paralyzed side The general condition was bad Respiration was irregular, of Biot's type The child was very irritable and stuporous The fontanel was markedly bulging

Thirty c c of fluid under high pressure were removed by lumbar puncture, and 12 c c of serum injected

Eighteen hours later there was no improvement

Daily puncture for three successive days was done with injection of horse serum varying from 3 to 12 c c There was continuous but slow improvement, and after the fourth treatment the paralysis totally disappeared, the child became bright, took its nourishment well, and made an uninterrupted recovery

EFFECT OF SERUM INJECTION ON CEREBROSPINAL FLUID

As previously explained, in almost all instances there is a hyperleukocytosis with relative polynucleosis, a change in condition from a moderate number of lymphocytes, within eighteen hours to a very high cell count, almost all being polymorphonuclears The fluid macroscopically twenty-four hours after serum injection often shows a faint opalescence, occasionally the fluid becomes very turbid, but bacteriologic examination shows a sterile fluid, like that seen in aseptic meningitis The fluid of the last case treated shows findings typical of all original fluid on first puncture clear fluid, moderate pressure, seventy cells per cubic millimeter, all lymphocytes Globulin positive plus Fluid eighteen hours after serum injection 330 cells per cubic millimeter, almost all polymorphonuclears, globulin + +

The cytologic change following serum injection disappears in a varying length of time, usually about forty-eight hours

Convalescent Serum—The use of a blood serum obtained from cases convalescent from infantile paralysis offers the advantage of a human serum plus the presence of immune bodies That serum obtained from at least recently convalescent cases contains immune bodies has been proved by the neutralization test in the monkey (the neutralization of poliomyelitis virus mixed with the serum, and subsequently injected into the monkey) It has been stated that serum is potent even from those who had had infantile paralysis years previously The serum used in our series was obtained from two adults three weeks' convalescent About 10 ounces of blood were removed through a
large into sterile bottles under strict asepsis
The s in aken thoroughly (glass
head ri the defibrination) The
blood n entrifugated, and the
serum y If the serum is to be
store us le to add a little pre-
erv ro it 56 C (132 8 F)

for one hour The serum should be tested for the Wassermann reaction

Netter[1] reported the use of convalescent serum in thirty-two cases, with good results The difficulties of arriving at any decision as to the value of convalescent serum are apparent in attempting an analysis of his figures

Our first series here reported consist of four cases

Case 7—E R aged 4½ years, ill two days, was admitted to the hospital in the preparalytic meningitic stage The temperature was 102, there was no paralysis Forty c c of clear fluid under high pressure were removed by lumbar puncture, and 15 c c of convalescent serum injected

Eighteen hours later the child was brighter, not so irritable or drowsy, and there was no paralysis

Steady improvement continued till the third day, when slight paralysis of the right deltoid appeared

Sixth day, the patient was well, and there was no paralysis

This case could well be considered aborted

Case 8—M C, girl, aged 8 years, ill five days, had complete paralysis of both lower extremities, and partial paralysis of both upper extremities The patient was very irritable, restless, and noisy, and had considerable respiratory embarrasment During the first two days in the hospital, general treatment was used but the condition was unchanged and caused us considerable anxiety on account of the respiratory symptoms. Convalescent serum was then used

Thirty-five c c of clear fluid were removed by lumbar puncture, and 15 c c of convalescent serum injected

The patient on the following day was quieter, looked better and felt better Her limbs were less painful and tender Improvement in her general condition continued, but up to the time of this report, six days later, there was no change in the paralytic condition

Case 9—J A, aged 4 years, was treated on the twelfth day of illness The general condition was good, but there was phrenic paralysis and persistent cyanosis Little was to be expected from serum treatment, but it was administered on account of the gravity of the condition Sixty c c of cerebrospinal fluid were removed and 13 c c of convalescent serum injected Ten days later, there was slight improvement but it was apparently not due to the serum

Case 10—Child, aged 1½ years, admitted about the sixth day of the disease, with diplegia, was very drowsy, and had marked respiratory irregularity Macewen's sign was marked

Forty c c of clear fluid were removed by lumbar puncture and 10 c c of convalescent serum injected

Twenty-four hours later the general condition was much improved, and the child was brighter

Four days later the child was convalescing but there were no changes in the paralytic condition

Results—The convalescent series was very small, but the results were certainly no better than in the normal horse serum series

In the normal horse serum series, two cases treated in the preparalytic stage were aborted One case was aborted under the convalescent serum treatment Best results were obtained in early cases

Some of the late cases treated showed more improvement than is generally seen in untreated cases There was more rapid convalescence and improvement in the paralytic condition

It is hard to judge as to the saving of life, but the sickest patients, totaling fourteen, were selected for treatment, and there was only one death, that patient was almost moribund at the time of treatment

Normal Human Serum Treatment—No observations were made

Epinephrin Treatment—Dr S J Meltzer suggested the use of epinephrin intraspinally as an active form of treatment

The work of Dr Clark,[2] done at Dr Meltzer's suggestion, on the action of subdural injections of epinephrin in experimental poliomyelitis, indicated that for a time at least there was considerable response in the paralyzed animals

Observations in the hospital were made in only three cases, an insufficient number from which to make any deductions A boy of 5 with respiration paralysis had three doses at six-hour intervals There was considerable temporary improvement, but the boy ultimately died The other two patients each had only one dose with no result except sharp rise in blood pressure Dr Meltzer's suggestion, however, was to inject the epinephrin intraspinally at least every six hours in doses of from 0 5 to 1 c c for small children

3 TREATMENT OF RESPIRATORY PARALYSIS

Respiratory paralysis is the most common cause of death in infantile paralysis It is therefore of prime importance to meet this complication early, so as to tide the patient over the critical period until congestion and inflammation about the center subside Transient paralysis, which can most logically be explained as being due to relief of congestion, edema and vascular involvement, is one of the regular features of this disease

Many have noted that patients could be kept alive for hours, in one case three days, under artificial respiration

In very stuperous, comatose cases with respiratory paralysis, a more active form of artificial respiration is indicated At my inquiry, Dr Meltzer suggested his pharyngeal respiratory apparatus for comatose patients, and for conscious patients, if possible early after respiratory difficulty has set in, he suggested the administration of oxygen under pressure by his method A more detailed discussion of the results and technic will be given in a later paper The administration of oxygen under pressure kept a number of patients alive for hours It was used in several cases with slight respiratory embarrassment with benefit, but it was difficult to judge in these whether more serious respiratory paralysis was warded off

The pharyngeal apparatus was used in several cases without result As a rule the patient is conscious almost until the end, so that pulmonary edema is far advanced when the patients become unconscious The method, however, should certainly be given careful trial

4 GENERAL TREATMENT

At this time attention will be directed only to the importance of general treatment, especially in public wards We are dealing with helpless children, each of whom requires especial care as to feeding, and care of bladder and bowels Respiratory embarrassment should be carefully watched for Turning from side to side is important, in this connection Dr Meltzer suggested that it might possibly have some influence on the paralysis, owing to shifting of edema

5 ORTHOPEDIC TREATMENT

This should be begun as early as possible Patients should be watched from the beginning by the orthopedist

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[1] Netter Arch de med d enfants Jan 16 1916

[2] Clark P F The Action of Subdural Injections of Epinephrin in Experimental Poliomyelitis The Journal A M A Aug 3 1912 p 367

FOCAL INFECTION IN RELATION TO CERTAIN DERMATOSES *

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LOUISVILLE, KY

It is an unfortunate fact that we dermatologists have neglected the search for the true etiologic factors of the diseases of the skin, devoting our efforts more to nomenclature and classification Recently there has been a change, and research into dermatologic diseases is being undertaken more vigorously now, both in laboratories devoted especially to dermatologic pathology and bacteriology and in the clinics and offices of the dermatologists themselves Especial credit for this awakening is due to Billings and Rosenow, whose theory of focal infection has opened our eyes to the explanation of certain dermatoses whose etiology was entirely obscure a few years ago Now that we have the key we can unravel many a mystery, trace relationships, and diagnose intelligently, whereas only a few years ago we had to fall back on the much overworked term "idiopathic" in the description of such cases It is a very few years since the epochal work of Billings described the relationship between focal infection and systemic disturbances, the theory at first met with ridicule and unbelief, but was so well supported by clinical and experimental data that it soon gained practically universal acceptance, and a vast amount of work has been done in the new field opened up by it Of course, as is usually the case with that which is new, some men became too enthusiastic about it and carried it to an extreme, sacrificing teeth and tonsils, whether abnormal or not, in the presence of almost any diseased condition of the body, without stopping to make a careful search for the true causes However, more conservative observers have been utilizing the new theory to great advantage, and while they have not found it an explanation of all diseases, they have opened up a new chapter in the study of the etiology of many diseases and the consequent rational treatment of them

There are few to doubt that the presence of a steady spring of infection can cause many reactions and inflammations in other parts of the body in which the bacteria may find lowered resistance or a more suitable soil Especially has this been recognized in those cases of arthritis and neuritis which were formerly lumped together as rheumatism, because so many of these cases have been reported, but not less true is it that a similar relationship exists between the so-called "focal infections" and skin diseases, and a great many dermatoses, formerly attributed to various other causes, can now be definitely traced to focal infections Focal infection does not mean, as some seem to think, a source of infection in mouth or throat only, for the infecting source may be almost anywhere in the body Most of us have encountered cases which could be traced to infection of the kidney, bladder, prostate, urethra or other part of the genito-urinary tract, or to infection from gastric or duodenal ulcer, chronically inflamed appendix, rectal fistula, or cholecystitis Middle ear disease is a frequent cause of skin reactions, infected sinuses another, typhoid fever is also liable to cause dermatoses, as nearly all the more chronic infections may do, as well as sometimes the acute ones, such as pneumonia

The reader of dermatologic literature will occasionally find mention of the part played by focal infections in skin diseases Gosse[1] quotes McKenzie, 1886, that erythema nodosum is often accompanied by rheumatism, and suggests that it may be due to toxic or infectious diseases, in which connection it is interesting that Edward C Rosenow,[2] working at the Mayo Clinic, reported recently that certain streptococci have an elective affinity for the skin, most evident in strains isolated from cases of erythema nodosum and herpes zoster, but also manifested to a lesser degree by strains from endocarditis, myositis, mumps and cholecystitis

Galloway's article[3] in 1912 should not be overlooked in this regard He lays stress on the fact that in rheumatic infections we often see a scarlatiniform eruption, exudative multiform erythemas, and erythema nodosum, and especially that such erythemas accompany septic forms of rheumatism In streptococcal infections of the kidney, liver and joints an inflammatory erythema of the skin frequently appears At times a pure hemorrhagic eruption occurs (purpura rheumatica, peliosis rheumatica Schoenleinii)

Gerber's investigations[4] are worthy of note, owing to their thorough and scientific character He worked out the relationship of focal infection to certain of the idiopathic dermatoses From the clinical point of view, Born, Uffelmann, Lewin and Besnier have noticed the coincident appearance of sepsis and erythema Hoffman succeeded in detecting cocci in the altered veins in a case of erythema nodosum, while Gerber investigated ten cases of this disease and found all of them due to focal infection, the genito-urinary organs being the source of infection in one case, an abscess in still another Histologic examination of the nodes revealed a thrombophlebitis of the cutaneous veins, in three cases cocci were found by this examination, while in still another case a growth of cocci was secured when cultures were made of parts of the nodes

Audrych,[5] in 1914, reported two cases of herpes zoster which were due to furunculosis, both of the patients recovering as soon as the furuncles ceased to make their appearance

In septicemia, Churchman[6] observed the following changes erythemas, papular eruptions, urticarial eruptions, hemorrhagic eruptions, bullous eruptions and herpetic eruptions

Vershinin[7] believed that a great many dermatoses might be due to gonorrheal infection, such as erythema exudativum, keratosis and parakeratosis In my experience, cases of recurrent eczema were due to gastric and duodenal ulcers A recurrent urticaria was associated with carcinoma of the pancreas and a case of generalized pruritus with malignant tumor of the uterus

Many more cases of this kind could be quoted It is deplorable that dermatologists have not been plodding enough to collect such cases in the past, but it is a good sign that there is more work being done along these lines at present

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* Read before the Section on Dermatology at the Sixty Seventh Annual Session of the American Medical Association, Detroit June, 1916

1 Gosse Erythema Nodosum, Practitioner, London, 1914 No
2 Rosenow, E C Elective Localization of Streptococci, T
Journal A M A, Nov 13, 1915, p 1687
3 Galloway, J Cutaneous Affections in Rheumatic Cor
Practitioner, London, 1912, lxxxviii, 67
4 Gerber, O Ueber das Wesen den sogennanten idiop-
Erythem, Dermat Ztschr, 1912, No 9
5 Audrych Zona conjugal, Ann de dermat et de syph,
No 5
6 Churchman Urol and Cutan Rev, 1914, No 1
7 Vershinin Dermatoses Due to Gonorrheal Infection, Rus
kozhn i ven boliezn, 1914, No 5

The following cases have been collected for this paper owing to the fact that they were obscure as to etiology and resistant to treatment, and may therefore be of some interest to the general practitioner. In all of them the usual remedies recommended by the best authorities were tried, but with only slight or transient relief.

REPORTS OF CASES

Case 1.—M. R., man, aged 25, with no history of syphilitic infection, had on his left cheek a tumor which looked very much like an epithelioma. Several surgeons examined him when I exhibited him before the Jefferson County Medical Society, and they agreed that it was malignant. Portions of the ulcer were removed and sent to two laboratories for examination. The reports from the two laboratories were essentially the same: proliferation of the epithelial layers and their invasion of the deeper structures. The destruction of tissue was too rapid, however, for me to be satisfied that true malignancy was present. Further and more thorough examination revealed an infected root canal and alveolar abscess of an upper molar. On extraction of this tooth a fistulous tract was revealed. Simple treatment of irrigations with mild antiseptics sufficed to heal the fistula, after which the ulcer healed rapidly, leaving only a small scar.

Case 2.—B. O., woman, aged 23, garment operator, referred to me by Dr. Boggess, had a typical roseola eruption, sore throat, swollen glands and patches in the mouth, fever of from 102 to 103, and headaches. Syphilis was suspected. The patient denied any illicit intercourse, but was afraid that she might have syphilis insontium. The Wassermann reaction was negative. On closer examination I found ragged tonsils with crypts full of pus. The *Bacillus influenzae*, pneumococci and streptococci were found. Applications to the tonsils locally, with acetylsalicylic acid (aspirin) and hexamethylenamin internally cleared up the symptoms. The patient was advised to have her tonsils removed, but she refused and has had several attacks since then.

Case 3.—N., woman, aged 24, referred to me by Dr. A. Pfingst, had chronic attacks of urticaria of angioneurotic type. All the usual remedies failed to relieve her. After eliminating all other possible causes that might have been responsible for her condition, hypertrophied tonsils with infected crypts were found. After the removal of the tonsils by Dr. Pfingst, urticarial attacks became milder and eventually entirely disappeared.

Case 4.—M. W. D., girl, aged 17 years, had acne which yielded to Roentgen therapy and mild lotions. A year afterward she developed a very obstinate case of urticaria which made her life miserable. No treatment of any kind was of any avail. The affection persisted for months. (During my vacation she consulted and received attention from other physicians without any benefit.) Noticing the peculiar way she swallowed her words when talking, I examined her throat and found abnormal tonsils. The latter were removed and improvement followed rapidly. No further attacks have been reported.

Case 5.—Miss E. W., aged 18, had a very obstinate attack of urticaria, accompanied by angioneurotic edema. The usual remedies were employed externally and internally with little benefit. Examination of her throat revealed very badly hypertrophied tonsils. After the removal of the tonsils the dermatosis disappeared.

Case 6.—Mrs. F. S., aged 21, referred to me by Dr. Ewing Marshall, was treated for a very obstinate case of urticaria, accompanied by angioneurotic edema. Ordinary remedies caused only slight improvement, and that mainly in the subjective symptoms. Recurrent attacks persisted. She was advised to consult Dr. Cheatham, who found hypertrophied pyogenic tonsils. Their removal was followed by a prompt disappearance of all the symptoms.

Case 7.—H. B., girl, aged 11, was suffering from frequent attacks of scarlatiniform erythema accompanied by high fever. Ordinary remedies gave prompt relief, but since the attack recurred quite often and local throat remedies only temporarily relieved her condition, removal of the tonsils was advised. After their removal she made a perfect recovery.

Case 8.—Mrs. J. B., aged 60, suffered from recurrent attacks of labial and generalized eczema. Pruritus accompanying these attacks was unbearable. Repeated urinalysis showed no cause for them. A vesicovaginal fistula was discovered, and she was referred to the late Dr. W. Wathen. After this trouble had been corrected the attacks ceased entirely.

Case 9.—Mrs. R., aged 34, consulted me for chronic recurrent eczema of the head and chest. We attributed the cause of her illness to faulty metabolism. Internal and external remedies only temporarily relieved the condition. Mild attacks suggesting a chronic appendicitis occurred several times. An operation was suggested by me. After the removal of the appendix by Dr. Haggard of Nashville, the skin reactions ceased to make their appearance.

Case 10.—Miss N. C., aged 26, referred to me by Dr. Duvall of Ghent, Ky., developed a very severe case of erythema circinatum bullosum. The etiology was traced to streptococcic infection of the throat. When the throat received the proper attention, the erythema yielded to mild external applications.

COMMENT

These are only a few selected cases. Many more could have been cited. Not all systemic and skin derangements are due to focal infection; a great many obscure diseases may be traced to faulty internal secretions, which offer a great field for clearing up the etiology of obscure diseases; but, again, faulty internal secretions may be due to focal infection. It all teaches us to be on our guard and to make thorough examinations in doubtful cases. Let us be more careful, cautious, conservative and painstaking, and, above all, let us treat the skin not as a surface only, but as a cutaneous organ, as capable of infection from within as any other organ.

ABSTRACT OF DISCUSSION

Dr. Everett S. Lain, Oklahoma City: I am inclined to believe that focal infections may be as important a factor in the causation of some of the common skin eruptions as are food or protein anaphylaxis. Last year, in discussing lichen planus, I mentioned that I had been roentgenographing the teeth and examining the tonsils in all of my cases of lichen planus. In the publication of that discussion, in spite of the fact that I had corrected the proofs, the typesetter made me say that I had been treating these cases with the Roentgen ray. At any rate, I am making a search for apical abscesses and pyorrhea. My investigations along this line are not yet complete, for I wish to collect a sufficient number of cases to make the conclusions drawn therefrom worthy of consideration. However, I can say now that in a large percentage, perhaps 95 per cent. of cases of herpes zoster, we have found apical abscesses. In a large percentage of cases of lichen planus, about 85 per cent., we have also found similar pockets of pus or evidences of pyorrhea. In the majority of cases of herpes zoster the symptoms began to subside within a short period after the extraction of the infected teeth. We have known for a long time that tonsillar infections were closely allied to rheumatism and herpes zoster. Something more definite, perhaps, may develop from this work.

Dr. Richard L. Sutton, Kansas City, Mo.: I am convinced that in some instances certain skin disorders, as herpes zoster and erythema multiforme, are a result of the absorption of specific micro-organisms from foci in the tonsils or in root abscesses. Dr. Lain recently called my attention to the frequency with which alveolar abscesses are found in these cases, and I believe that in every instance a roentgenogram should be made of the patient's maxillae. Such a procedure requires only a few moments, is inexpensive, and may serve to throw much light on the point in question.

Dr. Walter J. Heimann, New York: Herpes zoster is an acute infectious disease producing immunity. Thus recurrences are practically never seen. If it were the result of a persistent focus of infection in the gums, or at root apexes, it would be reasonable to expect repeated attacks, which is contrary to our experience

Dr Ernest L McEwen, Chicago One of the cases of herpes zoster reported by Rosenow occurred in the dermatologic clinic at Rush Medical College The man had a severe attack of herpes zoster involving the right side On examination, the tonsils were found to contain pockets of pus, and from this pus an organism was grown which was inoculated into dogs in whom, I believe, the disease was reproduced and the organism again recovered

Dr Howard Morrow, San Francisco During the past year we have seen a number of cases with localized areas of inflammation on the tongue, and indistinguishable from syphilitic glossitis The patients were given antisyphilitic treatment without avail On further examination, alveolar abscesses were found, and after the removal of the involved teeth the glossitis disappeared

Dr Michael Leo Ravitch, Louisville Dr Lain said that in over 80 per cent of cases of lichen planus investigators found evidences of a source of focal infection That has not been my experience, and my few cases could not be traced to focal infection, no matter how hard we tried I do not think that lichen planus can be traced to a focal infection, nor do I believe that many cases of dermatoses are due to infection from the mouth or nose There are many other possible sources of infection in the body

THE DIET OF CHILDREN AFTER INFANCY *

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BALTIMORE

During the last quarter of a century more careful study has been given to infant feeding than to any other subject in pediatrics Nearly every clinician has his favorite method, which he is willing, even anxious, to defend on all occasions The infant, too, has been made the subject of a considerable number of complete metabolism experiments, in which his total heat loss has been calculated and the amount and composition of the food necessary to supply this loss and to furnish material for the rapid growth of his body have been estimated These determinations of the data necessary for the infant's life and growth have confirmed the clinical experience of many years, namely, that while there are often marked individual differences in their need for food, sufficient nourishment can be supplied in an almost infinite number of food combinations, and that infants have a remarkable and very fortunate capacity to assimilate mixtures which are far removed in composition from their normal diet While all this is true, it has been shown frequently that few babies can be made to gain who do not receive nourishment having a calorific value of more than 70 calories per kilogram, that is, 32 calories per pound, that the average infant will thrive best on a diet approximately 100 calories per kilogram, 45 calories per pound, and that a certain number of infants require considerably more than this last amount in order to thrive

This knowledge of the infant's dietetic needs and even an approximate adjustment of his food to him under various conditions of temperature and environment, together with a much greater attention to the cleanliness of his milk mixtures, have been potent factors in the reduction of infant mortality among bottle fed babies in recent years When one considers these facts, which are generally recognized in respect to the infant, it is somewhat remarkable that comparatively little attention has been given to the diet of children who have recently passed their infancy It is true, of course, that the diet of older children becomes increasingly complex and diversified, as they advance in age, and also true that the need for a specially restricted diet is less imperative for runabouts than for infants

It does seem advisable, however, that when one is attempting to feed young and growing children, a diet should be provided in which the number of heat units in proportion to the weight of the child should be known, as well as the ratio of the protein content to that of the fat and carbohydrates A young child's diet need not be radically altered from day to day By a suitable interchange of cereal and fresh vegetables, meats and simple desserts, having about the same food values, sufficient variety is afforded There have been no careful recent studies on the metabolism of growing children Writers today still rely on the painstaking researches of Camerer[1] on his own children, conducted more than twenty years ago, for their fundamental data

TABLE 1—FOOD REQUIREMENT FOR CHILDREN PER KILOGRAM OF BODY WEIGHT

Age Years	Sex	Protein, Gm	Fat, Gm	Carbo hydrate Gm	Calories
2 to 4	*Each*	3 6	3 1	9 2	75
5 to 7	Girls *Boys*	3 3 5	1 9 2 5	10 7 10 9	69 70 6
7 to 10	Girls *Boys*	2 7 2 8	1 3 1 3	9 9 10 4	39 2 61 6

Camerer estimated the food needed for children of various age periods per kilogram of body weight to be about as shown in Table 1 Similar investigations on young children made by Hassa, Herbst, Steffin and Uffelman have been tabulated by Locke[2] These tables bring out several important facts, which must be borne in mind the successful feeding of children

First, the actual amount of food required by growing children increases gradually to maturity

Second, the relative quantity of food in proportion to the body weight decreases almost as regularly from infancy to maturity, that is to say, the amount of food and the number of heat units per kilogram or pound is greater the younger the child The calorific value of the food required per unit of body weight at various ages can be estimated only roughly Locke combines the values determined by several authors as shown in Table 2 This he thinks may be a safe general standard It is freely granted that many children will thrive on a diet of lower calorific value and occasionally one will need more food to insure gain It is of distinct help, however, to bear in mind the average dietary needs, so that a wide departure from this mean

TABLE 2—FOOD REQUIREMENT DETERMINED BY SEVERAL AUTHORS COMBINED BY LOCKE

Age Years	Calories per Kg	Calories per lb
2	94	42
4	82	37
8	67	30

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* Read before the Section on Diseases of Children at the Sixty Seventh Annual Session of the American Medical Association, Detroit, June, 1916

[1] Camerer Der Stoffwechsel des Kinder Tubingen, 1894

[2] Locke Boston Med and Surg Jour, 1912, clxix, 702

will be made only for definite indications The lack of sign posts of this kind in the textbooks on pediatrics is too evident In some, certain amounts of various foods are prescribed for children of given ages under two years, while in many of them no idea of the proper amount of cereal, meat or green vegetable suggested is intimated

A case which illustrates the injury from unwitting overfeeding is the following

A girl of 5 years was brought to the office from a neighboring city because she would not gain She had a long febrile illness with chronic otitis media two years before and remained in a hospital for two months She was discharged in fair condition and continued well for some months, when she went through a severe attack of ileocolitis Following this she gained slowly The mother became anxious She had a carefully arranged diet list and the food was prepared with the greatest care by a trained attendant. Because of her failure to gain, the amount of food was steadily increased despite the occurrence of occasional attacks of acute indigestion The stools were unusually large

When seen, the child had not gained for several months, was pale, her eyes were slightly sunken and she was much under weight The diet was investigated and found to be well balanced, but to yield about 2,500 calories or more than 150 calories per kilogram When this was reduced by about one half the patient became much more sprightly and vigorous and began to make slow gain The amount of fecal material was greatly reduced

This case, I believe, is not exceptional and illustrates a danger which could be readily avoided if the calorific limits of the child's dietary requirements, above and below which it was not advisable to go, had been ever so roughly determined, as would have been done had she been an infant

In regard to the proportion of proteins, fats and carbohydrates needed in a child's diet in relation to age and weight, it is impossible to speak very definitely Protein is essential to repair waste, but when sufficient fats and carbohydrates are present to supply heat and energy the amount of protein needed is comparatively small

From the investigation already referred to it is recommended that not more than 4 gm of protein per kilogram be given in early childhood and about one half of that amount after 8 years Usually about 50 per cent of the protein of a child's diet should be of animal origin, in later life an increasing proportion is furnished from the vegetable kingdom As is well known, the fats and the carbohydrates are to a certain extent interchangeable in an average diet The fats have double the heat-producing power of either proteins or carbohydrates and can be increased when there is need of raising the caloric value of a diet without adding to its bulk

In Camerer's cases, the child at 2 years was given 4 gm of fat per kilogram and but 2 grams at 10 years A similar gradual reduction has been recommended by other investigators, and confirmed by long clinical experience

The carbohydrates are likewise subject to marked variations in a child's diet There is a great increase in the total amount of carbohydrate ingested as the child grows older, and there is a slight reduction in the carbohydrate intake per unit of body weight Too little carbohydrate leads to acidosis Locke puts the minimum requirement in childhood as 50 to 80 gm per day The usual quantity given is considerably more, perhaps 150 gm or 10 gm per kilogram of body weight

Taking the average values from a large number of investigations, Summerfield[3] has tabulated the variations of proteins, fats and carbohydrates, at several age periods as shown in Table 3 If one calculates the caloric values of the diet thus summarized, they can be shown not to vary greatly The marked difference in the figures are readily explained, as the fat and carbohydrates are largely interchangeable, and this is true in a measure of the protein also In other words, the food requirements of the body can be met by a great variety of combinations and the physician has a large latitude in his effort to adapt the child's diet to its digestive capacity and at the same time provide for the necessary heat, energy and growth

The quantity of water, fluid, given a young child varies within large limits with its exercise, the temperature, the moisture of the atmospheric air, and the character of the food A liter or quart should be the minimum fluid intake at 2 years, according to Camerer, and this amount is increased to about three pints for a child of 7 years

The metabolism of the mineral salts has been much studied recently Salts are essential to the well-being of the growing child, but are furnished in abundance in a diet containing the average quantities of cereals green vegetables, milk and fruits A small amount of table salt should be added to cereals and vegetables to make them more palatable In a well-assorted diet in health they need not be calculated With these fundamental needs of the child in mind, the physician should add to the exclusive milk diet of early infancy in such a manner as to provide a balanced ration and one readily digested

TABLE 3—FOOD REQUIREMENT AVERAGED FROM MANY INVESTIGATORS TABULATED BY SUMMERFIELD

Age Years	Protein Gm	Fat, Gm	Carbohydrates Gm
From 2 to 4	40 to 64	32 to 62	110 to 205
From 5 to 7	50 to 58	30 to 62	145 to 197
From 8 to 10	60 to 88	30 to 70	220 to 250

The first addition other than sugar is some form of cereal Cereal gruels, when properly prepared, can be digested in early infancy A cereal water may be used as a diluent instead of water After the age of 6 months cereal gruel should be given the baby once or twice a day At 10 or 12 months broth or beef juice can be given in increasing quantities up to 2 or 3 ounces It is often well to add to the broth well-cooked rice, stale bread or plain cracker If there is a tendency to constipation, the pulp of baked apple, apple sauce or prune pulp, one to three tablespoonfuls, can be given to a child about 1 year of age From this time onward to the second year the diet can gradually be extended by the addition of an occasional coddled egg and later of some scraped lean beef Baked potato or macaroni can be substituted for rice Dry toast, stale bread or cracker with a small quantity of butter are helpful during teething

At from 10 to 18 months one of a number of green vegetables, thoroughly cooked and strained, may be given in small quantities, one or two tablespoonfuls, with the midday meal At this time a simple dessert, junket, custard, tapioca, etc, can be added By these simple procedures the child's diet is gradually amplified, in accordance with the underlying principles already referred to Perhaps the most frequent mistake that is made in feeding babies between 1 and 2 years of age is the tendency to continue with large quantities of milk, at the expense of a more varied diet Milk contains little or no iron, and by this time the child has used up that surplus stored in his organs and unless more is furnished it becomes pale and ceases to thrive Another frequent difficulty results from the too frequent feeding of children after their first year Five feedings, including milk, often reduced to four in twenty-four hours, if properly spaced, will give the child all the food he needs and this will be taken with much more zest than if the feedings are more frequent As has already been emphasized, one realizes fully that children can be made to thrive on widely differing diets and certainly one would hesitate even to suggest that any particular diet list is to be preferred

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[3] Summerfield in Pfaundler and Schlossmann The Diseases of Children Am Edit. Philadelphia J B Lippincott Co 1, 424

It has seemed helpful, however, to have at hand a diet list for several age periods, in which the caloric values and the protein, fat and carbohydrate contents are determined With a sheet of this kind before us, we can easily substitute similar foods for those on the list and still keep well within the limit of a child's tolerance A simple list suitable for a child of 12 to 18 months, weighing 24 pounds, 11 kilograms, is given in Table 4

TABLE 4—DIET LIST SUITABLE FOR CHILD OF 12 TO 18 MONTHS

Hour	Food	Amount		Protein, Gm	Fat, Gm	Carbohydrate, Gm	Calories, Gm
		Ounces	Grams				
6 30	Cereal, strained	2 to 3	90	1 5	0 2	10 0	50
	Milk	8	250	8 0	9 0	11 0	165
							—— 215
10 30	Milk	8	250	8 0	9 0	11 0	165
	Zwieback, 1 piece			1 4	1 4	11 0	65
							—— 230
1 30	Broth chicken	3	90	2 5			10
	Rice or macaroni	2	50	1 4		12.0	60
	Bread, small slice			2 5	0 5	15 0	75
	Milk	4	125	4 0	4 5	5 5	83
							—— 228
5 30	Cereal	2 to 3	90	1 5	0 2	10 0	50
	Milk	8	250	8 0	9 0	11 0	165
	Apple sauce 1½ tablespoonfuls		40		0 25	16 0	70
							—— 285
	Approximate total			38 8	35 05	112 5	958

This list affords about 90 calories per kilogram of body weight, or 41 to the pound About 30 gm of the protein is derived from animal food and 8 gm from vegetable food This provides about 1,000 calories In it, too, the total quantities of protein, fat and carbohydrate are all well within the limits thought to be desirable It is noted that a small portion of the total protein is furnished from the vegetable kingdom A diet list for an older child, say between 2 and 4 years of age, weighing 13 kilograms, approximately 30 pounds, could be as given in Table 5

This list provides about 80 calories per kilogram of body weight, or 38 per pound, and supplies 26 gm of animal protein and 19 gm of vegetable origin It is to be noted that the calorific value of the diet is about the same as that suggested for a younger child, that there is considerably more variety, that the proportion of milk is reduced and that but three feedings are given in twenty-four hours There is a slight advance in the amounts of all the food elements, which are still well within the average limits It is to be noted also that a larger proportion of the protein is derived from the vegetable kingdom

It is believed that with information of this kind before him, the physician may find it easier to substitute similar foods for those specified in the table and at the same time give an equally satisfactory diet In the preparation of food so much is of necessity inaccurate that it is entirely useless to attempt to do more than give approximate values for the quantities of food used On this account a simple list showing roughly the calorific values of the various foods commonly given to young children will furnish results sufficiently accurate in ordinary practice Such a table has been suggested by C H Smith [4] The amounts are calculated to a level tablespoonful, approximately half an ounce, which seems to be the most convenient measure to use in the household, as given in Table 6 With the use of this list the heat units in any ordinary diet can be determined readily

TABLE 5—DIET LIST SUITABLE FOR CHILD OF FROM 2 TO 4 YEARS OF AGE

Hour	Food	Amount		Protein, Gm	Fat, Gm	Carbohydrate Gm	Calories Gm
		Ounces	Grams				
Breakfast	Cereal	3	100	2 8	0 5	11 5	60
	Egg boiled	1 4	50	6 6	6 0		80
	Bread, 1 slice	1	30	4 0	0 5	20 0	100
	Butter	¼	8		7 0		60
	Milk	6	180	6 0	7 0	8 0	120
							—— 420
Dinner	Meat	1	30	7 0	3 0		60
	Potato	2	60	2 0		16 0	75
	Green veg (spinach)	2	60	1 5	2 5	2 0	35
	Bread, 1 slice	1	20	3 5	0 6	20 0	100
	Butter	¼	8		7 0		60
	Dessert (custard)	1	30	2 0	3 0	6.0	60
							—— 390
Supper	Cereal	3	100	2 8	0 5	11 5	60
	Milk	6	180	6 0	7 0	8 0	120
	Crackers		30	0 4	0 4	3 0	20
	Fruit (apple, baked)	2	60			15 0	60
							—— 260
	Approximate total			45	45	121	1,070

Table 7 gives a diet on which a boy of 9 years, weighing 66 pounds, 30 kilograms, thrived This diet provided 1,970 calories, about 65 per kilogram, or 30 per pound In it there is *increasingly* larger proportions of vegetable protein than in the list for younger children It is of course understood that there will be considerable daily variations in the nutritive and calorific values of a given diet, depending on what

TABLE 6—CALORIFIC VALUE OF SOME COMMON FOODS

One Level Tablespoonful, About ½ Ounce	Calories
Cane sugar	60
Cream (16 per cent)	50
Butter	115
Fruit pulp	10
Baked apple	15
Cereals	10
Mashed vegetables	15
Clear soup	5
Puree of vegetable	15
Meat of fish	25
Milk	10
Cocoa	15
One cracker	20
One thick slice of bread	75
One piece of toast *thin*	25
One egg	75
Custard, soft	20

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[4] Smith, C H, quoted by Wachenheim *Infant Feeding* Philadelphia, Lea & Febiger, 1915, p 316

particular cereal is used, what meat or what variety of green vegetables, etc Extreme accuracy has no practical advantage, and if the diet, especially for older children, is varied from day to day, the weekly average will be fairly constant It is advisable for the physician to have a list of a number of suitable cereals, green and white vegetables, simple desserts and fruits, any one of which can be substituted for another of the same group There is sometimes an advantage in preparing three or four daily diets, which can be used in succession, rather than to leave the selection entirely to mother or nurse One delicate child we saw recently did not gain, although careful general directions as to diet had been given, until three varied diet lists, each having about the same number of heat units, were furnished

It was the object of this paper simply to call attention to such meager data as we have at our disposal concerning the average food requirements of young and growing children, to outline such diets as would satisfy these requirements, and to suggest further that it is a simple matter to calculate in a general way the calorific value of a given diet so that at least a child's need may be satisfied and on the other hand that he may escape continuous overfeeding It is understood, of course, that there are great individual differences in the digestive capacity of young children, and that some children will grow on a diet much lower than the average

TABLE 7—DIET ON WHICH A BOY OF 9 YEARS WEIGHING 66 POUNDS THRIVED

		Calories	
Breakfast	Toast 3 pieces	75	
	Butter ½ ounce	60	
	Cereal 3 ounces	75	
	Egg 1 ounce	75	
	Sugar ¼ ounce	30	
	Cocoa 7 ounces	200	
		—	500
Dinner	Broth 6 ounces	60	
	Meat 2 ounces	100	
	Green vegetables 3 ounce	90	
	Potato 3 ounces	80	
	Rice 3 ounces	90	
	Bread 2 slice	150	
	Butter ½ ounce	120	
	Dessert (custard) 4 ounces	110	
		—	800
Supper	Toast 3 slices	75	
	Egg one	75	
	Butter ½ ounce	115	
	Milk 8 ounces	100	
	Baked apple 3 ounces	50	
		—	415

* One level teaspoonful equals one-half ounce

The method outlined enables the physician to check the food of growing children in some such manner as he would do that of an infant, and is a valuable aid in careful feeding at a most important age period in life Much depends on the quality of the food and on its cooking The physician must be prepared to give specific directions as to the preparation of the child's food The alteration of the diet required in various diseased conditions, it is not the intention of this paper to discuss Certain ailments, such as scurvy, tetany, the various diatheses, indigestion, constipation, diarrhea and anemia may be due entirely to ill-adapted diets and can be cured when these are corrected In such cases this can be accomplished without seriously lowering the calorific value if the physician knows how to make the proper substitutions By this natural method a considerable proportion of drugs now freely dispensed can be omitted It has been pertinently asked by Professor Mendel why physicians take so much care in measuring their doses of drugs, which are administered only occasionally, and so little care in measuring their food prescriptions, which are to be followed daily

211 Wendover Road

Therapeutics

BLOOD PRESSURE

(Continued from page 359)

BLOOD PRESSURE AND PREGNANCY

Evans[25] of Montreal studied thirty-eight pregnant women who had eclampsia, albuminuria and toxic vomiting, and found the systolic pressures to vary from 200 to 140 mm He did not find that the highest pressures necessarily showed the greatest insufficiency of the kidneys, but that the blood pressure must be considered in conjunction with other toxic symptoms In thirty-two cases he was compelled to induce labor when the blood pressure was 150 mm or under, while in four cases with a blood pressure over 150 mm, the toxic symptoms were so slight that the patients were allowed to go to term and had natural deliveries

A rising blood pressure in pregnancy, when associated with other toxic symptoms, is indicative of danger, and Evans believes that a systolic pressure of 160 mm is ordinarily the danger limit

Newell[26] has studied the blood pressure during normal pregnancy, and finds that when the systolic pressure is persistently below 100, the patient is far below par, and that the condition should be improved in order for her to withstand the strain of parturition When the systolic pressure is above 130, the patient should be carefully watched, and he thinks that 150 is the danger line Some pregnant women have an increasing rise in blood pressure throughout the pregnancy, without albuminuria In other cases this rise is followed by the appearance of albumin in the urine Thirty-nine of the patients studied by Newell had albumin in the urine without increase in blood pressure, hence he believes that a slight amount of albumin may not be accompanied by other symptoms Five patients had a blood pressure of 140 or over throughout their pregnancy, and in only one of these patients was albumin found All passed through labor normally, showing that a blood pressure below 150 may not necessarily be indicative of a serious condition, but a patient who has a systolic pressure over 135 must certainly be carefully watched A fact brought out by Newell's investigations is very important, namely, that a continuously increased blood pressure is not as indicative of trouble as when a blood pressure has been low and later suddenly rises

Hirst[27] also urges that a high blood pressure in pregnancy does not necessarily represent a toxemia, and also that a serious toxemia can occur with a blood pressure of 130 or lower, although such instances are rare Hirst believes that when a toxemia is in evidence in pregnancy while the blood pressure is low, the cause of the toxemia is liver disturbance rather than kidney disturbance, and he thinks this form of toxemia is more serious and has a higher mortality than the nephritic type Therefore in a patient with eclamptic symptoms and a low blood pressure, the prognosis is more unfavorable than when the blood pressure is high He believes that if high blood pressure occurs early in the months of pregnancy, there is preexisting, although perhaps latent, nephritis In these conditions the diastolic pressure is also likely to be high

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[25] Evans Month Cyc and Med Bull November 1912 p 649
[26] Newell F S The Blood Pressure During Pregnancy The Journal A M A Jan 30 1915 p 393
[27] Hirst Pennsylvania Med Jour, May, 1915 p 615

With the patient eclamptic and stupid, whatever the date of the pregnancy, Hirst would do venesection immediately in amount from 16 to 24 ounces, depending on what amount seems advisable If venesection is done before actual convulsions have occurred, the blood pressure falls temporarily but rapidly rises again He finds that if a patient is past the eighth month, rupture of the membranes will usually bring a rapid fall of from 50 to 90 points in systolic pressure Usually, of course, such rupture of the membranes will induce labor He finds that the fluidextract of veratrum viride is valuable when eclampsia is in evidence or imminent He gives it hypodermically, 15 minims at the first dose and 5 minims subsequently, until the systolic pressure is reduced to 140 or less He admits that this is rather strenuous treatment He does not speak of treatment by thyroid extracts, which has been regarded as valuable by some other workers

In these patients who show eclamptic symptoms, he maintains a milk diet, and purging and sweating It should be remembered that venesection or profuse bleeding during induced parturition is more valuable than sweating in all eclamptic cases and in all nephritic convulsions Profuse sweating does little more than take the water out of the blood, and even concentrates the poisons in the blood

Hirst causes purging by 2 ounces of castor oil and a few minims of croton oil He also advises large doses of magnesium sulphate In such serious disturbances as eclampsia, it is not necessary to give a magnesium salt, which, it has been shown, can have unpleasant action on the nervous system Sodium sulphate is as valuable and is not open to this danger

Hirst urges that whatever the blood pressure, with albuminuria, as soon as persistent headache occurs, and especially if there are disturbances of vision, the pregnancy must be terminated at once On this there can be no other opinion Temporizing with such a case is inexcusable

After labor has been induced there is an immediate fall of blood pressure, which lasts some hours The pressure will again rise, and usually is the last sign of toxemia to disappear, and he finds that this increased pressure may last from two to three weeks when there is not much nephritis, and several months when there is nephritis

Although he says he has found no bad action from ergot, either by the mouth or hypodermically in these eclamptic cases, it would seem inadvisable to use ergot, which may raise the blood pressure He finds that pituitary extract "can cause dangerous rise of blood pressure"

Pellissier[28] believes that when there is prolonged vomiting in early pregnancy, with an increase in systolic blood pressure, and with an increased viscosity of the blood, the outlook is serious, and active treatment should be inaugurated

Irving[29] reports, after a study of 5,000 pregnant women, that in 80 per cent the systolic blood pressure varied from 100 to 130, in 9 per cent it was below 100, at least at times, but a pressure below 90 does not mean that the woman will suffer shock, in 11 per cent the pressure was above 130, and high pressure in young pregnant women more frequently indicates toxemia than when it occurs in older women, high pressure is more indicative of toxemia than is albuminuria, a progressively increasing blood pressure is of bad omen, and most cases of eclampsia occur with a pressure of 160 or more, but eclampsia may occur with a moderate blood pressure Irving believes that with proper preliminary preventive treatment most eclampsia is preventable

(*To be continued*)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES"

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL

W A PUCKNER, SECRETARY

FIBRIN FERMENT AND THROMBOPLASTIC SUBSTANCES (KEPHALIN)

The clotting of blood (that is, the transformation of the fibrinogen of circulating blood into the insoluble fibrin of blood-clot) has been shown to be due to the action of the fibrin ferment (thrombin) on the fibrinogen of the blood The fibrin ferment or thrombin exists in the blood in the form of its forerunner (prothrombin) which is acted on by the calcium salts and converted into thrombin Besides calcium salts, however, another factor is necessary In spite of a sufficient supply of calcium salts, blood does not clot spontaneously within the vessels This other factor may be furnished from the breaking down of blood cells or blood platelets or from the pieces of tissues that are cut or badly injured It has been designated as "zymoplastic" substance by Schmidt, as "thrombokinase" by Morowitz, and as "thromboplastic substance" or "thromboplastin" by Howell (*Am Jour Physiol*, 1912, xxxi, 1) Howell believes that the reason that blood does not coagulate within the vessels is that the prothrombin exists there in combination with an antithrombin, which prevents it from acting He believes that when blood is shed or flows over injured tissue the thromboplastin derived from blood cells, blood platelets or tissue cells combines with this antithrombin, liberating the prothrombin from combination with the latter The prothrombin thus liberated now combines with the calcium salts, is converted into thrombin and converts the fibrinogen of the plasma into fibrin, causing coagulation to set in Howell has shown that thromboplastin or "thromboplastic substance" from every source in which he has investigated it gives the reactions of the lipoid kephalin—the main lipoid of the brain It is soluble in ether, but insoluble in water, alcohol and acetone, and kephalin prepared from the brain possesses the same action

Actions and Uses—Preparations containing thromboplastin are said to be useful when applied locally in the treatment of hemorrhages, especially hemorrhages from oozing surfaces, scar tissues and nosebleeds, and in surgery of the bones, glands, nose and throat When injected subcutaneously or intravenously such preparations are said to shorten the coagulation time of the blood for a period of about twenty-four hours, but there may be a certain danger of a negative phase setting in Such injections are contraindicated in cases in which there is a tendency to thrombosis or embolism, for example, in arteriosclerosis, aneurysm, heart weakness, phlebitis, certain stages of syphilis, and in varicose veins Injections of kephalin seem to have little effect in hemophilia (Hurwitz and Lucas *Arch Int Med*, 1916, xvii, 543) Preparations should be standardized by testing on specimens of blood in vitro, which should be able to bring the coagulation time to about one third of its original length, they should be proven sterile, particularly if intended for intravenous use

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[28] Pellissier Archiv mens d'obst et de gynec, Paris, 1915, iv, No 5

[29] Irving, F C The Systolic Blood Pressure in Pregnancy, THE JOURNAL A M A, March 25, 1916, p 935

BRAIN LIPOID —Impure Kephalin — An ether extract of the brain of the ox, or other mammal, prepared according to the method of Howell as applied in practice by Hirschfelder (*Lancet*, 1915, ii, 542) (see below)

Actions and Uses —See general article, fibrin ferments and thromboplastic substances (kephalin)

Dosage —Brain lipoid may be smeared on gauze sponges, pledgets, or on the tissues themselves, or an emulsion in sodium chloride may be prepared by shaking up with physiologic saline solution and used in the same way or sponged over the tissues

For use in an office or dispensary, the ether extract suffices and can be kept ready for use for some time (several weeks) in a sterile dropper bottle from which an opalescent emulsion in salt solution can be prepared at a moment s notice by dropping 10 to 30 drops into an ounce of physiological saline solution and then shaking up This solution can also be dispensed from drug stores, provided the opening in the stopper of the dropper bottle is kept slightly open to prevent blowing off of the ether on shaking or heating

Brain lipoid (impure kephalin) is prepared from ox brain which is run through a hashing machine, then covered with three volumes of alcohol shaken up two or three times and the excess of alcohol then poured off and squeezed out gently through linen, care being taken to avoid great force in wringing out the alcohol, as this tends to break up the brain tissue into very finely divided particles which pass through the filter The residue is then covered with three volumes of ether shaken vigorously and filtered first through cotton and then through filter paper The clear filtrate thus ob ained is evaporated to dryness over a water bath and a yellow residue of fatty appearance and consistency remains (This residue consists largely of kephalin, but though the latter is not in the pure state, it is extremely active in accelerating the clotting of blood in vitro)

The method of preparation renders it sterile It can be transferred on a sterile spatula or knife blade to sterile vessels It retains its activity for several weeks

(The impurities present largely the lecithins and myelins do not materially detract from the activity of the kephalin but on the contrary facilitate its emulsification in saline solution and thus facilitate its intimate miscibility with blood)

SOLUTION BRAIN EXTRACT —Solution Thromboplastin-Hess —An extract of ox brain in physiological salt solution prepared by the method of Hess (THE JOURNAL A M A, lxvi, 558, Note 2)

Actions and Uses —See general article, fibrin ferment and thromboplastic substances (kephalin)

Dosage —The solution may be applied directly to the bleeding tissues or sprayed on them, or a sponge or tampon may be immersed in it and then pressed on the bleeding surface

Ox brains are obtained fresh from the slaughter house stripped of their membranes, washed in running water and weighed They are then passed through a meat chopping machine three times and an equal amount of normal salt solution is added This suspension is allowed to remain in the refrigerator for forty eight hours and it is then twice pressed through cheese cloth This extract which contains fine suspension of tissue in addition to tissue juice is diluted with one half its quantity of salt solution Cresol is then added in proper proportion so that the finished preparation contains 0 3 per cent It maintains its hemostatic potency for some time (several weeks) (Since cresol is not a perfect antiseptic the sterility of this preparation cannot be guaranteed)

GALACTENZYME TABLETS —Tablets Bacillus Bulgaricus-Abbott —Tablets containing a practically pure culture of *Bacillus bulgaricus* (Type A)

Actions and Uses —Galactenzyme tablets are designed for internal administration in the treatment of intestinal fermentative diseases by the Bulgarian bacilli, with the design of obtaining the growth in sufficient number of the bacilli in the alimentary tract so as to secure their characteristic action against putrefactive fermentation by the production of lactic acid

Dosage —One, two, or three tablets three times a day with meals The diet should be regulated to meet the condition which may be present

Galactenzyme tablets are marketed in bottles, each containing 100 tablets The tablets must be kept in a cold place and are not guaranteed beyond the date stamped on the label

Manufactured by the Abbott Laboratories, Chicago No U S patent or trademark

Cultures of a pure and virile strain of *Bacillus bulgaricus* (Type A) are grown on sterilized milk This milk culture of the organism is mixed with purified milk sugar The mixture is dried in a stream of sterile filtered air, at low temperature, and the dried product compressed into tablets under aseptic conditions

GALACTENZYME BOUILLON —Suspension of Bacillus Bulgaricus-Abbott —A pure culture in vials of *Bacillus bulgaricus* (Type A), each vial containing about 6 Cc

Actions and Uses —Galactenzyme bouillon is designed for internal administration in the treatment of intestinal fermentative diseases with the design of obtaining the growth in sufficient number of the bacilli in the alimentary tract so as to secure their characteristic action against putrefactive fermentation It is also used for topical applications in nasal, aural, throat, urethral and other affections when the use of such a culture is indicated

Dosage —The contents of one vial in a little sweetened water or milk once or twice daily, preferably on an empty stomach A small quantity of carbohydrate food should be included in the dietary

Galactenzyme bouillon is supplied in packages of twelve vials It must be kept in a cold place, and is not guaranteed beyond the date stamped on the label

Manufactured by the Abbott Laboratories Chicago No U S patent or trademark

Cultures of a pure and virile strain of *Bacillus bulgaricus* (Type A) are grown in a specially prepared bouillon

MERCURIC SALICYLATE (see N N R, 1916, p 195) —The following dosage form has been accepted

Ampuls Mercuric Salicylate Squibb 0 065 Gm —Each ampule contains mercuric salicylate 0 065 Gm (1 grain) in 1 Cc of sterile suspension Prepared by E R Squibb & Sons, New York

QUININE DIHYDROCHLORIDE (see N N R, 1916, p 260) —The following dosage forms have been accepted

Ampoules Quinine Dihydrochloride Squibb 1 Gm — Each ampule contains quinine dihydrochloride 1 Gm (15½ grains) in 2 Cc of sterile solution Prepared by E R Squibb & Sons, New York

Ampoules Quinine Dihydrochloride Squibb 0 5 Gm —Each ampule contains quinine dihydrochloride 0 5 Gm (7½ grains) in 2 Cc of sterile solution Prepared by E R Squibb & Sons New York

Ampoules Quinine Dihydrochloride Squibb 0 25 Gm —Each ampule contains quinine dihydrochloride 0 25 Gm (3¾ grains) in 2 Cc of sterile solution Prepared by E R Squibb & Sons New York.

QUININE AND UREA HYDROCHLORIDE (see N N R, 1916, p 262) —The following dosage forms have been accepted

Ampoules Quinine and Urea Hydrochloride Squibb 1 Gm —Each ampule contains quinine and urea hydrochloride 1 Gm (15½ grains) in 2 Cc of sterile solution Prepared by E R Squibb & Sons New York.

Ampoules Quinine and Urea Hydrochloride Squibb 0 5 Gm —Each ampule contains quinine and urea hydrochloride 0 5 Gm (7½ grains) in 2 Cc of sterile solution Prepared by E R Squibb & Sons New York

Ampoules Quinine and Urea Hydrochloride Squibb 0 25 Gm —Each ampule contains quinine and urea hydrochloride 0 25 Gm (3¾ grains) in 2 Cc of sterile solution Prepared by E R Squibb & Sons New York

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Requisites of Conversation —In conversation, humor is more than wit, easiness more than knowledge, few desire to learn, or to think they need it, all desire to be pleased, or, if not, to be easy —Sir William Temple

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SATURDAY, AUGUST 5, 1916

THE PROTECTION OF MICRO-ORGANISMS

" 'If ever there was a romantic chapter in pathology, it has surely been that of the story of phagocytosis' So said the late Lord Lister in his presidential address to the British Association in 1896, and so we, with equal fervor, say today when many more pages of the story have been turned over "[1] The term "phagocyte" was coined to designate the ameboid cells capable of seizing and digesting micro-organisms, red blood corpuscles and other formed structures The property of phagocytosis is an attribute of a considerable number of different varieties of cells besides the more familiar representatives present in the circulating blood and tissue fluids Zinsser[2] states that among the fixed cells of the body it is probable that phagocytosis may be carried on by cells of many different origins, though the identification of cells in tissues is often a purely morphologic problem, and therefore fraught with many possibilities of error Probably the most active fixed tissue cells are the endothelial cells of the blood vessels and those which line the serous cavities and the sinuses of the lymph nodes and of the spleen In addition to these, however, there are many other cells which may be phagocytic Zinsser and Carey have observed the active phagocytosis of leprosy bacilli by cells, probably of connective tissue origin, growing from plants of rat spleen in plasma Phagocytosis by the cells lining the alveoli of the lungs has been observed by Briscoe This author made the interesting observation that in cases of mild infection such cells can free the lungs of micro-organisms entirely without aid from the leukocytes of the circulating blood It is these cells, too, which, in the ordinary conditions of life, take up the inhaled particles of dust and are often spoken of, therefore, as dust cells These flattened cells are probably of epithelial origin, and as such are probably the only epithelial cells which act as phagocytes under ordinary conditions Although no positive general statement is justified, we can yet say with reasonable accuracy that among the phagocytic fixed tissue cells the most important are the connective tissue and endothelial cells

The dominant conception in the minds of those who have dealt with these phagocytic phenomena has been the purposeful character of the process with the end of destruction of the ingested organism in view Rous and Jones,[3] of the Rockefeller Institute for Medical Research, have pointed out that the possibility that in certain instances cells not only fail to kill the organisms they ingest, but actively protect them from circulating antibodies, seems not to have been considered In illustration of the significance which this topic may have, it is pointed out that there are a number of important diseases, among them leprosy, tuberculosis, gonorrhea and leishmaniosis, caused by microbic parasites which live more or less habitually within tissue cells

The New York investigators have contributed important facts which should be taken into consideration in the study of diseases caused by infectious agents capable of living within tissue cells They have demonstrated definitely that living phagocytes are able to protect ingested micro-organisms from the action of destructive substances in the surrounding fluid, and even from a strong homologous antiserum There is evidence that the protection by the phagocytes is largely if not entirely conditioned on their being alive It remains to be determined, Rous and Jones write, how far the protection of micro-organisms by living tissue cells, especially cells incapable of killing the micro-organisms, is important in disease processes The phenomenon may have much to do with the survival in the animal body of organisms such as the leprosy bacillus, which is so often found living within cells of the fixed tissues, and it may serve to explain in part the therapeutic difficulties in such instances It may throw light, the writers further add, on the formation of new disease foci at points of injury in individuals of high general resistance For if an infective agent can be "walled off" from the action of the body fluids by the protoplasm of a single cell containing it, there is no reason, as Rous and Jones conclude, why it should not be carried unharmed wherever this cell goes

THE REACTION OF THE PANCREAS AND THE PANCREATIC JUICE

It is generally accepted that the chemical reaction of living tissues, like that of the blood, is slightly alkaline or neutral On impairment of circulation and oxidation, or on death of the tissues, an acid reaction quickly develops, owing to the accumulation of acid metabolites and waste products In life the organs, like the blood, appear to have the power to maintain practical neutrality even under quite varied physiologic conditions As applied to the pancreas, this general conception has recently been called in question in a series of papers by Long and Fenger[1] These investigators report that the living pancreas of all animals so far investigated has an acid reaction, whether tested by indicators, by titration, or by the electrical conductivity methods The acidity is practically constant, and does not vary with the seasons or the animal's diet

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[1] The quotation is from Fraser, Elizabeth T A Manual of Immunity, Glasgow, 1912, p 57

[2] Zinsser, Hans Infection and Resistance, The Macmillan Company, New York, 1914, p 278

[3] Rous, Peyton, and Jones, F S The Protection of Pathogenic Micro Organisms by Living Cells, Jour Exper Med, 1916, xxiii, 6

Most of the tests were made on press juice from the macerated organ, separated by the centrifuge Applying this method to other organs, they found that the liver, spleen and salivary glands usually give an acid reaction, but much less than the pancreas, while the press juice of the fresh thyroid gland is neutral in reaction They conclude that "the acid reaction of the pancreas is undoubtedly a normal one, and it has been overlooked, because the outflow from the fistula (the pancreatic juice) is so plainly alkaline" In the first paper it is suggested that "during the normal activity of the pancreas the work of the cells results in sending an excess of alkaline phosphates to the intestines, while an excess of the acid phosphates is retained to make the gland tissue slightly acid" This is a new conception of the mechanism of alkalinity of the pancreatic juice It is well known that the alkalinity of normal pancreatic juice is equal to about 0 5 per cent sodium carbonate, and it has been generally held that it is actually due to the excess of alkaline carbonates, the trace of phosphoric acid hitherto reported in the juice not being sufficient to account for the alkalinity on the basis of alkaline phosphates In their second paper the authors show by chemical (quantitative) analyses that the marked acid reaction of the pancreas is due to the presence of acid phosphates and acid nucleoproteins But practically no evidence is adduced to show that the alkalinity of the pancreatic juice itself is due primarily to alkaline phosphates rather than to carbonates The reason advanced for the accumulation of acid phosphates in the gland itself in the course of normal activity remains, therefore, an interesting hypothesis

When the minced pancreas is centrifugalized, the material separates into three layers a top layer of fatty material, a middle layer of clear fluid, and a bottom layer of proteins and debris Most of the trypsin is found in the bottom layer, while the lipase and the diastase pass mainly to the clear liquid When the pancreas is thus treated, the trypsinogen is activated This is in harmony with reports of previous investigators to the effect that trypsinogen is activated on standing, and by weak acids, etc They also find that the trypsin thus obtained acts best in a slightly alkaline medium, just as is the case with normal pancreatic juice, "while the fluid itself in which the ferments are elaborated is distinctly acid" This applies, of course, not to the normal living cell, or to the normal pancreatic juice, but only to the pancreas press juice of Long and Fenger And it would perhaps be more correct to speak of the liberation rather than the elaboration of the ferments in the press juice

The fact that, with the methods employed, an organ like the spleen having no external secretion also gives an acid reaction seems to show that the theory of Long and Fenger of a balance between cell secretion and cell retention is inadequate to explain their high acid findings in the pancreas In any event, there must be a continuous adjustment of chemical reaction between the tissue cells and the blood, for the pancreas, in health, is secreting pancreatic juice continuously, and on the theory of Long and Fenger, this should lead to an increased storage of acid phosphates within the cells themselves The problem of the mechanics of the change in chemical reaction of body fluids under the influence of lining cells, as in the case of the urine and the gastric juice, is as yet far from solution The work of Long and Fenger may be the starting point of its solution for the pancreas and the pancreatic juice

THE DIARRHEA OF CHILDHOOD

The diarrheas of childhood are important because of their urgency, and attract attention because of certain features which make them somewhat distinct from the comparable gastro-intestinal disturbances of later years Errors of diet may not be more common in infancy and childhood than at subsequent periods of life, and the cause of diarrhea in the earlier years may be essentially the same as later, but somehow they appear to be attended with more serious consequences A consideration of literature of recent years will bring to mind numerous investigations tending to associate some of the types of infantile diarrhea with the presence of well recognized bacteria, for example, the Shiga bacillus, in the digestive tract There is little doubt, however, that clinically indistinguishable forms of diarrhea are related to other micro-organisms, if not caused by them, so that it has even been thought probable that, after all, there may be no specific bacillus responsible for this common disorder of childhood Furthermore, inasmuch as various foods or indiscretions in diet have often appeared to bear some relation to the onset of the symptoms, it has repeatedly seemed not unlikely that products of bacterial decomposition either arising in the food or formed from it in the intestinal tract must share the chief responsibility for the production of the diarrhea and vomiting

With such thoughts in mind, Mellanby[1] working at the London Hospital Medical College under the auspices of the Local Government Board, has attempted to elucidate the pathogenesis of diarrhea in children along chemical lines rather than by the conventional study of its purely bacteriologic aspects This procedure certainly seems justifiable in view of the failure of previous research to associate the disorder definitely with any causal factor, either bacterial or chemical In searching for a possible chemical cause for symptoms such as diarrhea and vomiting, depression of the respiratory center, fall of blood pressure, and coma, encountered in children who are affected, Mellanby selected betaimidazolylethylamin This substance has been discovered in recent years not only as an extremely active and toxic substance isolated by Barger and Dale[2] from ergot, but also as an occasional constituent of the alimentary tract of animals It owes its origin in the latter case to the bacterial disintegration of the amino acid histidin derived from proteins Micro-organisms capable of producing the amin from the amino acid have actually been isolated from the intestine

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[1] Long J H and Fenger E On the Reaction of the Pancreas Jour Am Chem Soc 1915 xxxvii 2213 ibid 1916 xxxviii 1114 Long J H Hull Mary and Atkinson H V Ibid 1915 xxxvii 2427

[1] Mellanby E An Experimental Investigation of Diarrhoea and Vomiting of Children, Quart Jour Med 1916 ix, 165

Employing betaimidazolylethylamin, then, as a representative toxic product of alimentary bacterial origin, Mellanby has studied the conditions which may favor or retard its formation or absorption Among the results which may have a practical bearing on the subject of diarrhea and vomiting of children, it was found that there is a marked delay in the absorption of toxic substances, normally in the intestine, when animals are injected with large quantities of fluid During the digestion of foodstuffs generally there is a similar delay, likewise the presence of water and the presence of bile in the bowel delay the absorption of toxic substances The resistance against such products is greatly increased by injection of fluid into the circulation, and diminished with a decreased amount of fluid, particularly after the loss of blood Without entering into the hypothetic details as to how such consequences may arise, it will suffice to point to Mellanby's conclusions by analogy A child suffering from diarrhea and vomiting owing to loss of fluid and loss of bile salts, with an empty intestine and in a starving condition, is in an ideal position for allowing toxic substances ordinarily present in the alimentary canal and mucous membrane to be absorbed rapidly and have their full toxic action Perhaps the association of this disease with a high atmospheric temperature in an epidemic form is to be explained largely by the additional loss of fluid due to evaporation of water in the body's attempt to keep its temperature normal

In the light of the artificial conditions obtaining in the experiments cited, the first essential of treatment ought to consist in restoring the normal volume of body fluids or even exceeding the usual condition in this respect, otherwise undesirable absorption will be increased, and with a suppressed production of alimentary secretions, food will be decomposed rather than digested in the intestine Water should be freely administered to diarrheic children, by mouth if possible Drugs like morphin and opium are to be avoided Feeding is not contraindicated, since it brings the secretory apparatus into play Such suggestions are admittedly tentative and, being evolved through scientific inquiry, deserve quite as careful consideration as do the therapeutic procedures which have been dictated by empiric methods Some account will doubtless need to be taken of the acidosis factor which Howland has emphasized Where uncertainty exists, any rational suggestion must be welcomed As Mellanby remarks, if the methods evolved from laboratory work are radically inefficient when applied to the specific clinical cases, one can only assume that the experimental conditions omit some essential factor — they do not sufficiently resemble the pathologic condition encountered in the disease

THE METABOLISM IN ANEMIAS AND DYSPNEIC CONDITIONS

The helpful service which clinical calorimetry is performing in the development of scientific medicine is not confined to one or two diseases to which reference was recently made[1] Pernicious anemia, likewise still a puzzling malady, has claimed a share of attention from the investigators of the Russell Sage Institute of Pathology, in affiliation with the Second Medical Division of Bellevue Hospital, New York[2] This newer work differs from many of the earlier investigations in that the observations on the metabolism of the disease were made on patients instead of animals Most anemias in the latter have been induced artificially by hemorrhage When we come to the application of experimental methods to clinical anemia, the problem at once becomes decidedly more complicated In addition to the simple anemias, there is the unique type of pernicious anemia Chlorosis and leukemia may be included in the category because of their low hemoglobin content Any difference that the clinical forms show may, quite apart from refinement of technic, be ascribed to essential differences between anemias artificially induced and anemias arising from pathologic agencies

It is a natural assumption that a paucity of hemoglobin, such as one finds in anemias, must seriously impair the oxidative processes in the body and thus alter the metabolism A decline in metabolic functions might even be expected The facts are, however, that a reduction in the hemoglobin does not preclude the possibility of either a normal or an augmented metabolism There is no evidence that metabolism runs its course on a lower plane in anemia The demand for oxygen may far exceed the demand in health But the compensatory processes in uncomplicated cases of pernicious anemia are capable of meeting the demand in spite of a greatly diminished hemoglobin content What these are, beyond the usual surplus of oxygen in normal tissues, is not yet clear

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[2] Barger, G, and Dale, H H Jour Physiol, 1910, xl, Proc 37, ibid, 1910 1911, xli, 499

[1] The Basal Metabolism in Obesity and Its Significance editorial The Journal A M A, July 22, 1916, p 288, Clinical Calorimetry July 22 1916, p 286, New Studies of Exophthalmic Goiter, July 29, 1916, p 360

[2] Meyer, A L, and Du Bois, E F Clinical Calorimetry, Fifteenth Paper The Basal Metabolism in Pernicious Anemia, Arch Int Med, June, 1916, p 965

The increase in metabolism shown in severe cases of pernicious anemia is commented on by Meyer and Du Bois in the way of a possible explanation through reference to well-known researches showing that muscles poorly supplied with oxygen are functionally less efficient Accessory muscles are called on to cooperate in the accomplishment of any task The mechanism of the vital function of respiration and circulation becomes more complex Proper breathing requires the activity of muscles which ordinarily play no role in respiration Again, the respiratory muscles may serve in securing a more efficient circulation In general, activity implies unusual effort, and hence the demand for additional oxygen Thus Meyer and Du Bois conclude that there is some ground for the belief that the height of metabolism is a measure of the severity of the clinical pictures

Another instance wherein an increased metabolism due to augmented muscular activity might be expected is furnished by dyspneic patients who must do additional muscular work in their labored breathing Of five patients with moderately severe dyspnea, studied in the Sage calorimeter by Peabody, Meyer and Du Bois,[3] all but one showed a distinct increase in metabolism Other patients, among the cardiorenal cases, with slight dyspnea also showed some increase To these most recent investigators the increases seem too large in many cases to be attributable to the extra muscular activity alone They add that evidently in complex groups of cardiacs and nephritics there are many factors at work, no one of which at present can be called on to account for the definite increase in metabolism found in dyspneic subjects Individuals with compensated cardiac lesions or with mild nephritis, however, showed a metabolism within normal limits

Current Comment

THE POISONOUS PRINCIPLE OF POISON OAK

Poison oak, *Rhus diversiloba* T and G, of the Pacific slope is closely related botanically to the poison ivy, *Rhus toxicodendron* L, of the Eastern states The toxic effects produced by these plants are believed to be identical and are familiar to most physicians Two other closely related plants, the Japanese poisonous sumac, *Rhus vernicifera* D C, and the American poisonous sumac, *Rhus vernix* L, produce similar toxic effects These sumacs are related to poison ivy and poison oak, though the relationship is not so close as that between the two plants last mentioned A number of chemists have studied the toxic principles of these two sumacs, but until recently no investigation of the chemistry of the poisonous principle of poison oak had been undertaken It has been pretty definitely settled that the poisonous principle of the sumacs is an amber colored, nonvolatile liquid resin which has acidic and phenolic properties, and which may be readily oxidized to a black, lustrous, durable varnish Stevens and Warren[1] have shown that there is considerable likelihood that the poisonous principle of poison ivy is identical with that in poison sumac The results of their investigations were in accord with those of Pfaff,[2] but did not agree with those of Syme and Acree,[3] who believed that the poisonous principle of ivy was a complex glucosid of rhamnose, gallic acid and fisetin McNair,[4] in an investigation of the toxic constituent of poison oak, found no evidence of fisetin, rhamnose or gallic acid, but does not offer any explanation of the nature of the active principle In view of the close botanic relationship between poison oak and poison ivy it seems probable that the active principles of the two plants are identical, it is regrettable that McNair's investigations have not settled this question

ANALYSES OF NORMAL HUMAN BLOOD

In emphasizing, in a recent number of The Journal,[5] that the shifting of interest in metabolism to a study of the chemistry of the blood calls for elaborate fundamental data on the normal composition of the circulating fluid, we scarcely expected this requirement to be met within a few days However, it is gratifying to record evidence of an independent appreciation of this point of view from the Laboratory of Pathological Chemistry at Bellevue Hospital, New York To the valuable statistics on the nonprotein nitrogen content of blood secured by Folin and Denis,[6] Myers and Fine,[7] McLean and Selling,[8] Taylor and Hulton,[9] Greenwald,[10] Hohlweg,[11] and more recently Bang,[12] among others, there are now available exceptionally complete chemical and physical analyses of blood[13] in thirty normal persons of both sexes and ages ranging from 17 to 60 Realizing that the values given in the literature disagree more or less and that in few cases have the various determinations been made on the individuals under strictly comparable conditions or on the same sample of blood, Gettler and Baker decided to adhere to some standard conditions which could easily be maintained in similar work on patients in the hospital The plan included a uniform hospital breakfast, blood withdrawal three hours thereafter, and the prompt initiation of the analysis by standard microchemical methods No less than twenty-eight determinations were made on each sample, requiring in all only 70 c c of blood The range of the results may be summarized briefly as follows The values for nonprotein nitrogen tend toward a higher level (from 30 to 45 mg) than those given by previous workers, the normal range of urea nitrogen should also be considered higher (from 15 to 25 mg) than previously reported by many workers Uric acid may reach as high as 3 mg in 100 c c of blood in many normal individuals, and surprisingly low figures were consistently obtained for creatinin (0 1 mg or less in 100 c c of blood) According to Gettler and Baker, any value for creatinin above 1 mg should be considered as possibly indicating a pathologic condition In this respect they propose to establish a standard somewhat lower than that suggested by their predecessors[14] With respect to the normal content of sugar in the blood, the values obtained range between 50 and 120 mg per hundred c c of blood — figures in general accord with those recorded by the majority of many recent investigators of this physiologic constant

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[3] Peabody F W, Meyer A. L. and Du Bois E F Clinical Calorimetry Sixteenth Paper The Basal Metabolism of Patients with Cardiac and Renal Disease Arch Int. Med June 1916 p 980

[1] Stevens and Warren Am Jour Pharm 1907 lxxix 518

[2] Pfaff Jour Exper Med 1897 ii 188

[3] Syme and Acree Am Chem Jour 1906 xxxvi 301

[4] McNair Jour Am Chem Soc 1916 xxxviii 1417

[5] The Nonprotein Nitrogenous Components of the Blood editorial The Journal A M A June 3 1916 p 1781

[6] Folin O and Denis W Jour Biol Chem 1913 xiv 29 1914 xvii 487

[7] Myers V C and Fine M S The Post Graduate New York 1914-1915

[8] McLean F C and Selling L Jour Biol Chem 1914 xix 31

[9] Taylor A E and Hulton F Jour Biol Chem 1915 xxii 63

[10] Greenwald I Jour Biol Chem 1915 xxi 61

[11] Hohlweg H Med Klin Wchnschr 1915 xi 331

[12] Bang I Biochem Ztschr 1915 lxxii 104

[13] Gettler A O and Baker W Chemical and Physical Analysis of Blood in Thirty Normal Cases Jour Biol Chem 1916 xxv 211

THE PROTEIN OF MUSCLE

Every physiologic chemist realizes the difficulties which at the present time attend the estimation of proteins in biologic tissues and products The quantitative statements in regard to this important group of proximate principles everywhere distributed in living matter are most frequently based on indirect determinations — on calculations made on the basis of estimations of nitrogen or in some similar way For example, the nitrogen content of a product is ascertained by some convenient method, such as the Kjeldahl procedure, and by the use of a factor (usually N × 6 25) the corresponding yield of protein is approximated This is the way in which the composition of muscle tissue is ordinarily ascertained Animal muscle, however, contains other nitrogenous compounds besides proteins They are included among the so-called extractives of meat and represented by creatin, purin derivatives, etc Inasmuch as meat furnishes some of the most important items in the dietary of man and represents the foremost source of animal protein for most persons, the desirability of having accurate facts regarding the protein content of muscular tissues is apparent This is further accentuated by a growing recognition of the fact that protein and nonprotein nitrogenous compounds have an unlike significance in nutrition, so that the metabolism of each group demands separate consideration The perfection of an improved method of estimating the substances here referred to in muscle[15] has enabled Janney to revise our standards of the composition of muscle, in the interest of greater accuracy His newer work[16] shows that the amount of protein as calculated in the conventional ways for the more familiar types of muscle exceeds that determined by actual analysis by about 15 to 20 per cent in nearly all cases According to Janney the following figures represent average corrected values for muscle proteins chicken, 16 6 per cent , fish (halibut), 16 5, ox, 16 6, rabbit, 16 3, cat, 17 8, dog, 17 4, man, 16 4, whereas heretofore the published figures (N × 6 25) ranged from 18 to 21 per cent The data bring out the interesting fact that the actual protein content of muscle usually is quite constant for the various species Janney asserts that in wasting diseases among human beings, values as low as 12 per cent are obtained, so that, according to his view, in such muscular disorders as myasthenia gravis the amount of protein muscle substance present might be found to bear a definite relation to the specific muscular seat of the disease

POISON LAWS AND ORDINANCES

Reprint 330,[1] just issued by the United States Public Health Service, is a digest of laws and regulations relating to poisons and habit-forming drugs enacted during 1914 and 1915 It is the third supplement to Public Health Bulletin 56,[2] issued November, 1912, in which were presented all the federal, state and municipal laws and regulations on poisons and habit-forming drugs then in force The other supplements, reprints 146[3] and 240,[4] completed the compilation and brought the material up to the dates of publication The third supplement follows the plan of arrangement and classification established in Public Health Bulletin 56 and the two preceding supplements, the four pamphlets forming a complete and uniform compilation of laws and regulations on this subject Increasing attention on the part of legislators is being given to the regulation of poisons and habit-forming drugs Lack of uniformity in the various state laws, and lack of a standard definition of a poison are two of the most serious defects at present The enactment of the Harrison Narcotic Law, while it has led to the amendment of several state laws, has "in some instances at least increased rather than diminished the problems involved," in the opinion of the author, Martin I Wilbert As a practical result of the enactment of the Harrison law, those familiar with wholesale trade conditions assert that the sales of the proscribed drugs have been reduced fully 50 per cent Wilbert thinks that the elimination of the guaranty clause in medicine labels, under the national Food and Drugs Act, will remove a potent possibility for misleading the public Laws regulating occupational intoxications were enacted during 1914 and 1915 in two states, while laws restricting the use of wood alcohol are *increasing in* number and comprehensiveness Eight states enacted laws prohibiting the manufacture and sale of alcoholic liquors The laws regulating pharmacy have been amended in eleven states, while four states have legally adopted the Pharmacopeia and National Formulary as standards Naturally, such a compilation is largely a record of details which it is impossible to enumerate This pamphlet and the two preceding supplements, with the original bulletin, form a complete collection of laws and ordinances on poisons and habit-forming drugs with comments, tables and much additional illuminating material

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[14] Folin, O, and Denis, W Jour Biol Chem, 1913, xiv, 29, 1914, xvii, 487 Myers, V C, and Fine, M S The Post Graduate, New York, 1914 1915

[15] Janney, N W The Quantitative Determination of the Total Protein and Non Protein Substances of Muscle — Improved Technic, Jour Biol Chem, 1916, xxv, 177

[16] Janney, N W The Protein Content of Muscle, Jour Biol Chem, 1916, xxv, 185

[1] Reprint 330, a supplement to Public Health Bulletin 56, U S P H S, 1916

[2] Digest of Laws and Regulations Relating to Poisons and Habit Forming Drugs, Pub Health Bull 56, U S P H S, 1912

[3] Reprint 146, a supplement to Public Health Bulletin 56, 1913

[4] Reprint 240, a supplement to Public Health Bulletin 56, 1915

CHEMOTHERAPEUTIC TREATMENT OF TUBERCULOSIS

The newspapers on Wednesday morning of this week announced again the discovery of a specific treatment for tuberculosis and leprosy This announcement was based on the fact that the current issue (August) of the *Journal of Experimental Medicine* is devoted wholly to reports of work by Japanese investigators, Koga, Otani and Takano, on this subject Since Ehrlich's and Hata's discovery that a chemical combination might be of particular value in the treatment of syphilis, various investigators have attempted to apply chemotherapy to tuberculosis Some evidence is available to indicate that copper and cyanid exert a special influence on the tubercle bacillus Briefly, Koga found that the treatment of animals inoculated with tuberculosis with a preparation of copper and potassium cyanid produces, after repeated injections, healing changes in tuberculous lesions The extent of the healing, however, has not been determined Emulsions were made of lungs, liver, spleen and other organs of some of the animals, apparently healed, and injected into the abdominal cavity of guinea-pigs Some of the guinea-pigs receiving the emulsion developed tuberculosis, and further studies are being made Koga's experimental report is supplemented by a clinical report on sixty-three treated human cases, including the various stages of tuberculosis He believes, from his results, that the preparation, which has been named "cyanocuprol" greatly improves, or apparently cures, pulmonary tuberculosis in the first and second stages, and that it seems also to produce beneficial effects on the disease in the third stage Otani reports the results of treatment in eighteen cases of tuberculosis He considers "cyanocuprol" remarkably effective, and states that it may be more generally used than tuberculin He also defines the indications and the various conditions governing the use of the preparation Takano used the "cyanocuprol" in six cases of leprosy with what appeared to be beneficial effects There is an element of secrecy connected with the preparation itself Koga states that it is a double salt of copper and potassium cyanid diluted 1 2,000 and treated "with a specific manipulation in order to prevent the formation of free hydrogen cyanid and the subsequent chemical changes into potassium and ammonium formate, which process is accelerated by heating" No statement is made as to what this "specific manipulation" is or consists of, at the same time Koga insists that unless this manipulation is carried out, the injection of the double salt of copper and potassium cyanid is not safe for human beings Further, nothing definite is said as to the proportions in which the various elements in the preparation are combined On the whole, however, these reports appear to be a scientific statement of the results of experiments by enthusiastic, yet at the same time conservative, investigators It will be interesting to watch the progress of what appears to be a scientific attempt to do for tuberculosis what salvarsan has done for syphilis

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS, EDUCATION PUBLIC HEALTH ETC)

ALABAMA

Personal—Dr Lloyd Noland, Birmingham, superintendent of the department of health of the Tennessee Coal, Iron and Railroad Company sailed from New York for Europe, July 8 Dr Noland will do medical research work and study in the war hospitals of France——Dr William T Cocke has been appointed health officer of Demopolis, succeeding Dr Thomas C Savage M R C, U S Army, who has been ordered to Fort Sam Houston Texas

Typhoid Fever—Since June 1, between 500 and 600 cases of typhoid have been officially recorded in the Birmingham district and with the unreported cases, of which undoubtedly many exist the number of cases in the district will be near 700 In the city alone 350 cases were reported during the first twenty-five days of July, with twenty-five deaths The epidemic has, it is believed been definitely checked—— Surg Leslie L Lumsden U S P H S, who was called to Birmingham to investigate the situation, stated in his report that the cause of the recent outbreak was ice cream manufactured by a single manufacturer Of 300 cases examined 163 patients had eaten ice cream manufactured only by this manufacturer A city wide clean-up campaign is being undertaken in Birmingham

ILLINOIS

Red Cross Hospital at Springfield—The Red Cross membership campaign committee at Springfield announces, as a result of the recent campaign a membership of 1,200 in the local chapter

Ambulance Corps Being Formed—A meeting was held in Springfield July 20 at the offices of Dr Jay T Wood to form an ambulance company of Springfield physicians which will offer its services to the Illinois National Guard

Personal—Dr Jesse G Maxon Harvard, who has been on duty at the mobilization camp at Springfield, has been ordered to duty as a member of the Medical Reserve Corps, at Fort Sam Houston, San Antonio, Texas——Dr Cora J Kipp, Mineral, who is the head of the Methodist Hospital at Brindaban India is on furlough in this country and will return to India in January——Dr George P Gill, Rockford, spoke before the Elks Club of Freeport, July 18, on "Experiences of the European War"——Dr William J Uppendahl Peoria, who has been serving with the allies in a field hospital for the past year has returned to the United States

Conference of Charities and Correction—The twenty-first annual state conference of charities and correction will be held in Alton October 20 to 22, and in connection with this conference the Illinois Association for the Prevention of Tuberculosis the State Association of County Home Superintendents and the State Probation Officers' Association will meet The general meeting on the first evening will be under the auspices of the Committee on Mental and Physical Efficiency The same subject will also be considered at the Saturday morning session on Saturday afternoon, "Probation and Prevention of Crime" and "Labor and Compensation' will be the subjects for discussion, on Saturday evening there will be a mass meeting at which "Probation and Prevention of Crime" will be considered, Sunday afternoon there will be a mass meeting on "Labor and Compensation" and the conference will close Sunday evening with a program on "Child Hygiene"

Chicago

Hospital Purchases Property—The Augustana Hospital has purchased property at Garfield Avenue and Sedgwick

Street, 379 by 267 feet It is proposed to erect a hospital building to cost from $200,000 to $300,000 on the site

Transfer of County Institutions to State—The act of the state in assuming charge of the Cook County Hospital for the Insane, Dunning, giving it the title of the Chicago State Hospital, is believed to have set the precedent for the transfer of the Cook County Detention Hospital and Psychopathic Institute to state control A committee of the board of administration met with the Cook County board in Chicago, July 26, to consider ways and means of the transfer

INDIANA

Society Transfers Hospital to City—The Kendallville Medical Society has turned the Lakeside Hospital over to the people of Kendallville as a public institution The property includes the hospital building, a second house which will be used as a maternity, and 3 acres of land

Red Cross Organization Formed—At a meeting of the charter members of the Indianapolis Red Cross, July 19, held in the Chamber of Commerce, directors were elected and the organization was perfected Drs Alois B Graham, James H Taylor and Herman G Morgan are ex-officio directors of the organization, and Dr Frank B Wynn was elected a member of the board of directors

Water Examinations—H E Barnard, Indianapolis, state food and drug commissioner, states that water samples are coming in for examination by the state board of health at the rate of twenty-five a day It has been found that about 60 per cent of the well water sent in is polluted Water from city supply sources is not found to be polluted so frequently Samples of ice are also being sent in In most cases the ice is found to be all right These samples are sent in by health officers and citizens

New Medical School Building—Trustees of the University of Indiana have recommended that a new medical school building, power house, laundry, and nurses' home be erected on the grounds of the Robert W Long Hospital, Indianapolis A committee was appointed, including the president of the university, Drs Samuel Smith, Richmond, Charles P Emerson, John H Oliver, and Frank F Hutchins, Indianapolis, to formulate plans for the proposed building and report as soon as possible to the board

Cornerstone Laid—The cornerstone of the new Marion County Tuberculosis Sanatorium near Oaklandon was laid with appropriate ceremonies, July 22, by Dr John N Hurty, secretary of the state board of health, and Dr George Thomas Palmer, Springfield, Ill, delivered the principal address After the exercises, a visit was paid to Cherryvale the fresh air farm of the Indianapolis *News*——Drs Alfred Henry and John A MacDonald have been appointed members of the board of managers for the institution, the appointment to take effect November 1

Medico-Military Assignments—The officers of the Medical Corps, Indiana National Guard, have been assigned and reassigned as follows Maj Larue D Carter, Indianapolis, commanding officer, Field Hospital, Company No 1, Capt John W A Emhardt, Indianapolis, First Lieut Simon Reisler, Indianapolis, First Lieut Harold W Nimal, Indianapolis, First Lieut Clint C Sourwine, Brazil, Capt Archibald G Chittick, Frankfort, commanding officer, Ambulance Co No 1, Capt James W Hadley, Frankfort, First Lieut Arett C Arnett, LaFayette, First Lieut Donald C McClelland, LaFayette, First Lieut Cecil E Johnson, Rensselaer, Maj Frank B Humphreys, Angola, commanding, Regimental Infirmary, Third Infantry, Capt George W Twomey, New Albany, First Lieut Leonard J Ostrowski, Indiana Harbor, First Lieut Butron A Thompson, Kokomo, Maj Earle S Green, Muncie, commanding, Regimental Infirmary, Second Infantry, Capt Geo F Holland, Bloomington, First Lieut Edwin G Kyte, Seymour, First Lieut Mitchell O De Vaney, Indianapolis, Maj Frank W Foxworthy, Indianapolis, commanding, Regimental Infirmary, First Provisional Regiment, Capt N Austin Cary, Crawfordsville, First Lieut Renos H Richards, Patricksburg, First Lieut Leonard P Collins Winamac, Capt Frank C Robinson, Martinsville, Artillery Battalion

KENTUCKY

Date of State Society Meeting Changed—The date for the annual meeting of the Kentucky State Medical Association in Hopkinsville has been changed from September to October 17-20

Smallpox at Fort Thomas—A case of smallpox appeared among the National Guard at the mobilization camp at Fort Thomas, July 18 The patient was a member of Company F, Second Infantry, Jackson The reservation was closed and all contacts were placed under surveillance and vaccinated

Personal—Dr William Hall Hawkins has resigned as city physician of Lexington and will locate in New York——Dr Wallis W Durham, Crofton, has been appointed second assistant physician of the Western State Hospital for the Insane, Hopkinsville, succeeding Dr Roy F Robinson, Hopkinsville, resigned——Dr Ben L Bruner has been elected temporary chairman of the Optimists Club of Louisville

Twelve Counties Join for Sanatorium—Representatives of the fiscal courts of Boone, Campbell, Carroll, Kenton, Bracken, Pendleton, Gallatin, Grant, Harrison, Mason, Owen and Robertson counties, comprising the Seventh Tuberculosis District, met in Covington, July 23, and considered the erection of a tuberculosis sanatorium on the hills between Covington and Newport The sanatorium will be designed to accommodate 350 patients

MARYLAND

Personal—Dr J Clement Clark has been reelected superintendent of the Springfield State Hospital for the Insane, Sykesville——Dr Stewart V Irwin, Baltimore, returned to America, July 11, after a partially successful attempt to inspect prison camps in Germany

Baltimore Roentgenologists Dine—The recently organized Baltimore Roentgenological Society, of which Dr Frederick H Baetjer is president and Dr Henry J Walton, secretary, held its first annual dinner at the Baltimore Country Club, June 23 Capt Arthur C Christie, M C, U S Army, and Drs Thomas A Groover, John H Selby and Harry E Simons of Washington, D C, were the out-of-town guests

On Guard Against Paralysis—The health department is conducting a house-to-house inspection of the section about South Bond and Thames Streets, from which the latest case of infantile paralysis was reported The decision to make this careful examination of conditions in that neighborhood followed an inspection by several of the city officials The neighborhood is in the heart of the foreign quarter of the city and the sanitary conditions leave much to be desired The inspection will be for the purpose of impressing on the people the importance of taking precautions against an outbreak of infantile paralysis

NEW YORK

State to Open Laboratories—It was announced at the state health department, on July 23, that three temporary state laboratories will be established immediately to aid in the fight against infantile paralysis Two of these laboratories will be on Long Island and the other probably at Kingston

Clinic Endowed—Announcement is made that the Psychopathic Clinic for Mentally Deranged and Feebleminded Persons at the State Prison, Sing Sing, has received an endowment of $10,000 from John D Rockefeller The clinic was opened August 3, and the advisory board is composed of Drs Terry M Townsend, George S Burns and William Seaman Bainbridge

New York City

Personal—Dr Timothy D Lehane, while performing a necropsy on a stowaway who died of a tropical fever suffered a wound of the arm which has become infected and may result in loss of the arm——Dr Carl F A Eggers, who has spent almost two years working in German military hospitals, has returned to this city for a short vacation, after which he will again return to Germany

Brooklyn Disposes of Stray Cats—As a part of the clean-up connected with the epidemic of infantile paralysis, about 50,000 cats have been caught and killed by the Brooklyn police since the epidemic began Practically no cats are seen in the streets except about the water fronts where the residents have objected to parting with cats, fearing that the rats from incoming vessels may be more dangerous than the cats

Psychologic Laboratory Established—A psychologic laboratory has recently been established at Bellevue Hospital New York, under the direction of Dr Menas S Gregory, chief of the psychopathic and alcoholic services Facilities will be provided for both clinical and research work As these services admit about 15,000 patients annually, the opportunities for research will be exceptional Dr Leta S Hollingworth, formerly psychologist in the Department of Public Charities in New York, has been placed in charge of the laboratory

Convalescent Hospital Opened—Directors of the Neustadeter Foundation established by Mrs Henry Neustadeter announced, July 20, that a temporary convalescent hospital for the care of infantile paralysis patients, to be known as the Neustadeter Home, would be opened by the foundation The home will be equipped with the most modern devices and will accommodate fifty patients, for whom treatment will be provided from eight to ten months Dr Sigismund S Goldwater, formerly health commissioner, is a member of the board of directors of the institution

A Conference on Infantile Paralysis—Health Commissioner Dr Haven Emerson has announced that a conference of pathologists and workers in experimental medicine will be held in the faculty rooms of the College of Physicians and Surgeons of Columbia University, commencing August 3 Among those from a distance invited to attend are the following Drs Victor C Vaughan, Ann Arbor Mich , Milton J Rosenau, Boston, James W Jobling Nashville, Tenn , Paul A Lewis, Philadelphia, William H Welch Baltimore, Ludvig Hektoen, Chicago, Charles C Bass New Orleans, Theobald Smith Princeton N J John F Anderson New Brunswick, N J , Richard M Pearce Jr, Philadelphia, Francis W Peabody, Boston and John G Adami, Montreal Que Reports to July 28 show that there have been 3,562 cases of infantile paralysis in this city, with 744 deaths It has been observed that the age incidence of the disease has advanced with the progress of the epidemic Of twenty-one Brooklyn patients listed according to ages by the end of last May none was more than 5 years of age Of 1,108 Brooklyn patients similarly listed by July 28 142, or 12 8 per cent., were more than 5 years of age and about 3 per cent were more than 10 years of age

NORTH CAROLINA

Sanatorium Opened—The Anson County Sanatorium, Wadesboro, was formally opened, July 5 In the morning clinics were held, after luncheon there was a short scientific session at which papers were presented and discussed, and in the evening a general reception was given to the physicians and the public, together with a linen showed for the benefit of the institution

Personal—Dr James A Speight, Nashville, Tenn, has succeeded Dr James C Braswell, Jr, as whole time health officer of Nash County Dr Braswell has accepted the position of health officer for the city of Rocky Mount——Dr Joseph J Kinyoun, Washington D C a native of the state, but for many years past one of the ablest of the physicians in the U S Public Health Service, has returned to North Carolina and assumed the duties of city health officer of Winston-Salem

OKLAHOMA

Hospital Opened—The City and County Hospital, Hobart, was opened for the reception of patients, June 21

New Board Officers—At the annual meeting of the State Board of Medical Examiners, held in Oklahoma City, July 12, Dr W Le Roy Bonnell, Chickasha, was elected president, Dr B L Denison, Garvin, vice president, and Dr Ralph V Smith, Tulsa, secretary

Personal—Dr Amos Avery has been appointed city physician of Sapulpa——Dr Timothy J Butler, M R C, U S Army Weatherford, has been ordered to report for duty at Fort Sam Houston Texas——Dr John A Brooke, Oklahoma City, has moved to Philadelphia

Health Education—Householders of Tulsa have been supplied with a free booklet dealing with modern sanitation and municipal health requirements In this pamphlet are considered various problems of milk supply, garbage disposition, the menace of the fly and kindred subjects

PENNSYLVANIA

Personal—Dr Clyde Hazlett, Pittsburgh, who has been on duty in Persia with the Russian Red Cross, is reported to be ill with typhus fever at Khoi Northwest Persia Dr Hazlett is being cared for by Dr Edward S Dickey, also of Pittsburgh, and also on duty with the Russian Red Cross

Infantile Paralysis Increases—Two new cases were reported in Philadelphia, July 27 and since the epidemic began one death has occurred The total number of new cases reported throughout the state, July 27, was seven and since the epidemic began about July 1, seventy-six cases have been reported to the health department.

Increased Entrance Requirement—An official communication just received from Jefferson Medical College states that the premedical class has been abandoned and that beginning with the session of 1917-1918 all matriculants will be required to present credentials showing the completion of two years of college work including courses in physics, chemistry and biology, with laboratory work, and a modern language, either French or German

Philadelphia

More Nurses for Health Stations—Eight more nurses have been appointed with the new health center established and others are to be started It is planned to increase the number to twenty two nurses This action was recently taken by councils The salary paid nurses in this work is $900 a year

Personal—Dr Enrique Sepulveda of Valparaiso, Chile, has visited this city and purchased hospital equipment for St John's Hospital Valparaiso Dr Sepulveda is chief of the eye, ear nose and throat clinic of that institution——Dr Edward A Treacy has been appointed assistant in gynecology in St Joseph s Hospital

Ban on Public Drinking Cups—A ban will be placed on the public drinking cups in Fairmount Park, according to the department of health and charities Dr Wilmer Krusen will enforce the law which prohibits the use of public drinking cups in this state It is said the park commission will act in accordance with the law

Pauper Patients to Have Summer Clothes—Through arrangements completed July 25, the director of the department of health and charities has arranged to supply the pauper inmates of Blockley with real summer clothing One thousand two-piece suits have been ordered for the inmates Heretofore these people were compelled to get along as best they could with whatever clothing they had Heavy clothing was frequently worn throughout the entire summer

Babies' Health Centers—Following the plan of the municipal authorities in establishing health centers in congested parts of the city private organizations, as mentioned in The Journal last week, have taken up that character of work in the campaign to reduce the mortality The Babies' Hospital established a branch system at Ninth and Pine Streets Mothers and their children will be given medical care, and arrangements will be made for them to sleep on roof gardens About $50 000 has been subscribed for the project Another new health center has been opened at 1136 North Second Street A physician and a corps of nurses are in attendance Three additional centers will be opened at points in South Philadelphia

WASHINGTON

Personal—Dr Benjamin S Cerswell, Toppenish, has been appointed full time health officer of North Yakima, succeeding Dr Thomas Tetreau resigned to become city health officer of Portland Me——Dr William B Abbott, Sunnyside, has been appointed deputy health officer of North Yakima

Medical Postgraduate Course—One hundred and one physicians of the state have registered for the first medical postgraduate course offered by the University of Washington extension division, Seattle The lectures in the course are being given in the council chamber of the city hall, and are given by Dr Charles L Mix Chicago, who also will give clinical courses at the various hospitals of the city

Sanitary District for State—At the closing session of the Association of State, County and City Health Officers at Seattle, July 11 the organization unanimously approved the draft of the bill to create fifteen sanitary districts in the state with a full time health officer in charge of each district This legislation will do away with the part time health officers and will substitute full time men trained in public health work and who will receive a salary of not less than $2,000 or more than $3 000

State Association Meeting—The Washington State Medical Association held its twenty-seventh annual meeting in Seattle, July 12 to 14, under the presidency of Dr John R Brown, Tacoma The following officers were elected president-elect, Dr George M Horton, Seattle, president, Dr John M Semple, Spokane, vice presidents, Drs Charles S Wilson, Tacoma, and Herman P Marshall Spokane, secretary-treasurer Dr Curtis H Thompson, Seattle (reelected), and assistant secretary-treasurer, Dr John H O Shea, Spokane, trustees for the first district, Drs Wilbur N Hunt, Burlington, Luther M Sims Kalama, Richard J O Shea, Seattle, Horace J Whitacre, Tacoma, trustees for the second district

Drs Cornelius J Lynch, North Yakima, Henry H McCarthy, Spokane, Frederick Epplen, Spokane, and Frank E Culp, Wenatchee, general trustees, Drs Wilson R Johnston, Spokane, Edwin W Janes, Tacoma, and Peter D McCornack, Spokane, delegates to the American Medical Association, Drs Don H Palmer, Seattle, and Donald E McGillivray, Port Angeles, and alternates, Drs Charles F Eikenbary, Spokane, and Edward A Rich, Tacoma The next meeting will be held in Spokane in 1917 At the annual banquet Dr Philip V von Phul, Seattle, presided as toastmaster, and a silver loving cup was presented to Dr Curtis H Thomson, for the past eight years secretary-treasurer of the association

CANADA

Association Meeting—The Canadian Public Health Association, The Canadian Association for the Prevention of Tuberculosis, and the Sanitary Services of the Province of Quebec will meet in Quebec City, Sept 13 and 14, 1916

Summer Course at Queen's—The summer session of Queen's Medical College, Kingston, which is being held on account of the need for doctors at the front, will close for two weeks on July 29 The summer session has been a very successful one, and there are over 100 students who have taken advantage of it to complete their course

Personal—Dr Ephraim E Kells, Regina, Sask, is in Chicago taking graduate work——Dr J W H Huykman, Jansen, Sask, a graduate of the University of Amsterdam, has commenced practice in Balgonie, Sask——Dr Warren A Dakin has returned from active service and resumed his duties as medical superintendent of the Regina, Sask, General Hospital——Dr Charles E Tran, Kamsack, Sask, has enlisted for overseas service——Dr Arthur W Tanner, Moosomin, Sask, was recently killed in action while on active service at the front

Colonel Primrose Returns—Lieut-Col Alexander Primrose, chief surgeon with the University of Toronto Base Hospital, which has been stationed at Saloniki, has returned to Toronto on short furlough The hospital was capable of housing 1,040 patients, but in the early days of its location in Greece, 1,500 was generally its full complement The hospital was recently moved to a new site and is now housed in huts, having been all winter in tents Splendid and efficient service has been done by this hospital unit, which is under the command of Brigadier-General James A Roberts, Toronto

Infantile Paralysis in Ontario—Maj John W S McCullough, Toronto, chief medical officer of health for Ontario, and Capt John G Fitzgerald, Toronto, of the provincial board of health, have visited Windsor, Ont, where there have been reported several cases of infantile paralysis, and in conjunction with Dr George R Cruickshank, Windsor, the medical officer of health, have taken the situation in hand Dr Fitzgerald is to proceed to New York and Boston to study means for the prevention of the disease Although the medical officer of health of Toronto denies there are any cases in that city, there are said to be two or three cases in the immediate suburbs

GENERAL

Military Surgeons Meeting Postponed—On account of the military activities on the Southern border, the meeting of the Association of Military Surgeons of the United States, which was to have been held at the Hotel Sherman, Chicago, October 2 to 4, has been postponed indefinitely

Appropriation for Medical Department—The secretary of war has submitted a supplemental estimate of appropriation of $7,000,000 required for the service of the fiscal year, 1917, by the medical and hospital department for the medical needs of an active military force of 400,000 men, in addition to amounts heretofore estimated for such purpose

Meeting of the American Association for the Study and Prevention of Infant Mortality—The official program for the annual meeting of this association, which takes place October 19-21, in Milwaukee, has just appeared Special sessions are announced devoted to obstetrics, propaganda, pediatrics, governmental activities, public school education and rural communities

Women Doctors in War—At a recent meeting in Boston to organize a unit of women doctors for service in case of war, Med Insp Norman J Blackwood, U S Navy, urged the necessity of organization in advance When war comes, the places of the men will have to be filled by the women Professional Women might learn how drugs are made women could organize classes for instruction in first aid, diet for the sick, join the Red Cross, learn of its various activities and find out what they are best fitted to do What Americans need, in the way of preparedness, said Dr Blackwood, is discipline which will engender a finer sense of patriotism

Medical Reserve Officers Interrogated as to Availability for Service—Officers of the Medical Reserve Corps, inactive list, have received a circular in which inquiry is made as to their readiness for service Each officer is asked to state whether or not he is a member of the National Guard, whether he would prefer service in the Southern department, whether he would prefer service in the Philippine Islands, Canal Zone, Hawaii, Alaska, etc, and how soon after notification he could report It is presumed that the intention is to recall regular army officers from the foreign posts mentioned as needed, and to replace them with the medical reserve officers who indicate their willingness to accept such service

Increase of Army Medical Corps—On the basis of 130,000 men in the army under the new law, there will be 910 commissioned medical officers, which would include twenty-eight colonels, fifty lieutenant colonels, 225 majors and 607 captains and first lieutenants On the basis of 100,000 men there would be about 250 vacancies in the junior grade There is always a difficulty in obtaining qualified candidates under the existing age limitation of 30 years (which really means 29, when the term at the Army Medical School is taken into account), as medical students are now being graduated later in life The proposed amendment to the existing law making the maximum age 32 instead of 30 may afford a possible relief, and render it possible to fill the corps with acceptable mature men

Infantile Paralysis—Five more public health service surgeons have been ordered to New York to aid in the campaign to prevent spreading of the infantile paralysis epidemic Twenty of the experts of the service are already there Those now ordered out are Surgeon William J Pettus, Charleston, S C, Surgeon Henry W Wickes, Detroit, Surgeon Dana E Robinson, Ellis Island (on leave), Past Assistant Surgeon R A Herring, Louisville, Ky, and Senior Surgeon Parker C Kalloch, Portland, Me All leave of absence has been cancelled by the service, it is said, on account of the imperative demand for surgeons Assistant Surgeon-General William C Rucker states that while the local authorities in New York seemed to have the situation pretty well in hand, the fight to prevent the disease from spreading to other parts of the country was just beginning

Fraudulent Infantile Paralysis Cures—Officials of the Department of Agriculture, charged with the enforcement of the Food and Drugs Act, have issued special instructions to inspectors to be particularly alert for interstate shipments or importations of medicines, the makers of which allege cure or alleviation of infantile paralysis In times past, it has been known that whenever a serious epidemic exists, unscrupulous dealers prey on the fear and ignorance of the public by flooding the market with worthless preparations for which they claim curative properties The Department of Agriculture warns that the Federal Food and Drugs Act applies only to products which are shipped from one state to another or offered for import or export, and that products which are made and consumed wholly within a single state are subject only to state laws Persons, therefore, buying or using a so-called remedy made in their own state must rely on the protection accorded them by their local health authorities

Congressional Notes—The following bill was introduced in the Senate by Mr Shafroth, July 7

A Bill to adopt the weights and measures of the metric system as the standard weights and measures in the United States

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that on and after the first day of January, 1918, all the departments of the government of the United States, in the transaction of all business requiring the use of weight and measurement, except in completing the survey of public lands, shall employ and use only the weights and measures of the metric system, and on and after the first day of January, 1920 the weights and measures of the metric system shall be the legal standard weights and measures of and in the United States

The bill was referred to the committee on standards weights and measures——The following joint resolution was introduced in the House of Representatives, July 11, 1916, by Mr Siegel

Joint resolution authorizing the president of the United States to pay $100,000 and to present a gold medal suitably engraved to the discoverer of a specific preventive or remedy for infantile paralysis

Whereas, The spread of infantile paralysis has at various times seriously endangered the health of the people of the United States, and

Whereas, It is freely admitted by the most eminent physicians of the United States that they do not know the cause thereof or the proper method of eradicating or preventing same and

Whereas It is to the best interests of the welfare and health of the people of the United States that a specific preventive or remedy for infantile paralysis be found therefore be it

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the president of the United States be and he is hereby authorized to pay $100 000 and to present a gold medal suitably engraved to the discoverer of a specific preventive or remedy for infantile paralysis and the money for making said payment and the cost of said gold medal are hereby appropriated out of any money in the treasury not otherwise appropriated

The resolution was referred to the committee on appropriations

The Gary System—The general education board announces that it is about to complete a study of the public school system inaugurated at Gary, Ind, that a full and authoritative account of this interesting experiment in public education may be available for study and use throughout the country The board has a staff of educational experts who have already devoted five months to a first hand study of the purposes, methods and costs of the system at Gary and the results actually achieved there The investigation has been under the charge of Abraham Flexner of the board, assisted by Frank P Bachman formerly associate superintendent of schools in Cleveland The specialists who have dealt with particular fields are Prof C R Richards, director of Cooper Union, vocational and industrial instruction, Mrs Eva W White, director of the extended use of public schools of Boston domestic science and arts, Prof George D Strayer, Teachers College, Columbia University, administration, organization and supervision, S A Courtis director research in the schools of Detroit, classroom testing, Lee K. Hanmer, director of the department of recreation and playgrounds of the Russell Sage Foundation physical training and recreation Prof Otis W Caldwell, University of Chicago science, Frank L Shaw recently with the Cleveland School Survey, statistical work, Ralph Bowman, formerly of the bureau of municipal research cost accounting In addition the board has made an appropriation to Prof Guy M Whipple of the University of Illinois for a systematic and thorough study of the talented child The board has also authorized a study of the junior high school, which includes the seventh and eighth grades of grammar school and the first year of high school This study will be made by Prof Thomas H Briggs of the Teachers College, Columbia University

FOREIGN

Deaths Abroad—Sir James Frederick Goodhart, Bart, M D, LL D, Aberdeen, F R C P London, aged 70, consulting physician to Guy's Hospital and Evelina Hospital for Children, London, died at his home in Portland Place, May 28 Sir James was an authority on diseases of children, Bradshaw lecturer at the Royal College of Physicians in 1885, on 'Morbid Arterial Tension" and Harveian orator in 1912, when his subject was 'Common Neuroses," and narrated the triumphs of pathology for the past forty years

Ten Thousand Dollar Prize for Best Mechanical Substitute for the Hand.—An anonymous donor has offered a prize of $10 000 (50,000 francs) to be handed over to the maker of the mechanical apparatus best supplying the place of the hand All competitors must belong to allied or neutral nations They are to demonstrate before the French Surgical Association mutilated men who have been using their apparatus for at least six months The surgical association will experiment with each apparatus on mutilated men for the length of time it thinks fit The apparatus rewarded is to remain the property of its inventor The competition will be closed two years after the end of the war Any person wishing to compete should write M le Secretaire General de la Societe Nationale de Chirurgie, 12, rue de Seine, Paris, France

Headship of Peking Medical College—The China Medical Board of the Rockefeller Foundation announces that the trustees of Union Medical College, Peking, have appointed Dr Franklin Chambers McLean New York formerly of the Rockefeller Institute professor of internal medicine, a position carrying with it the headship of the college Dr McLean is now on his way to the Orient, where he will study the work of the China Medical Board in Peking and Shanghai After an inspection tour of about three months he will return to collect his staff and study the administration of the outpatient department of some large hospital in the United States On his way to China, Dr McLean will spend about a fortnight studying the hospitals and laboratories of Japan

Death of Neisser—The cable announces the death at Berlin of the discoverer of the gonococcus Albert Neisser professor of skin and venereal diseases at the University of Breslau Ludwig Sigmund Albert Neisser was born at Breslau sixty-one years ago studied there, and became assistant to Simon professor of dermatology, and at his death in 1882 succeeded him in this chair and in the charge of the dermatologic clinic, to which he remained loyal to his death His discovery of the gonococcus dates from 1879, and he was one of the first to insist on the tuberculous nature of lupus, but his publications embraced almost the entire field of dermatology and syphilology, and especially the revolution in treatment, in diagnosis and sociologic consequences which followed the discovery of the causal agent of gonorrhea He was particularly active in studying the prophylaxis of venereal diseases in general and the prostitution question from the sociologic national-economic and ethical standpoints He attacked the question with new vigor after the war broke out, one of his latest articles on the subject was summarized in The Journal March 4 1916 p 777 He was one of the publishers of the *Archiv fur Dermatol und Syphilis,* of the *Bibliotheca med* and was the founder and editor of the *Stereoskopisch-med Atlas* His father was a physician at Breslau before him and translated several American works into German, including G M Beard's "Neurasthenia"

Typhus in Mexico City—The report from the Mexican national public health service for the month of March, just received states that 1,936 new cases of typhus were recorded at Mexico City in the five weeks ending April 1 The isolation hospital at Tlalpam had had 2,182 cases by that date since December 26, and the mortality had been 16 88 per cent among the 977 men and 15 16 per cent of the 1,205 women Mexico City has a force of 270 to fight the epidemic, seventy-three do house-to house visiting, twenty-seven watch over the theaters and movies eleven over the churches, sixteen have charge of special disinfections, and forty watch over the street cars to keep notoriously dirty persons from boarding the cars During the month over 15,000 were thus kept out of the cars The presence of the agents on all the tram lines was utilized further for enforcement of the antispitting ordinances Twenty-four of the agents have the task of convoying the 'notoriously dirty" to the disinfecting baths During the month the hair of 17,529 persons was cut, 5,523 had their beards shaved and 263 had their heads shaved Disinfecting baths were given to a total of 57,783, and 89 148 garments were disinfected Eleven agents, with an additional fifty on Sundays guarded the eighty-two churches against the entrance of the dirty (733), the sick (141), beggars (154), and persons carrying lunch (1,022) Of the forty-six places of amusement thirty-eight were disinfected and 4,111 notoriously dirty persons were refused admissions Overcrowding was also guarded against. Over 400 houses were disinfected, 530 rooms and unlousing was done on 807 individuals Two of the agents' succumbed to typhus within two months In the house-to-house visiting, 511 sick persons were found, seventy-eight of whom had typhus Flying brigades were also organized and sent through the poorer quarters of two neighboring towns Circulars were distributed and placarded advising the public to report to the authorities every case of sickness even simple fever, among their neighbors The expense of these circulars was shared by the medical inspectors as there were no funds for that purpose The total expense of the antityphus campaign for the month is said to have been $144 026 98 The chief of the national public health service is Dr J M Rodriguez, but Dr A Pruneda is in charge of the typhus campaign

WAR NOTES

Canadian Militia Needs More Doctors—Through the director of medical service of the Canadian Militia Department, a call has been made for an unlimited number of surgeons to serve with the Canadian Army Medical Corps The physicians must be British subjects, physically fit for active service not more than 40 years of age and graduates in medicine from a Canadian university All who are accepted will be given the rank of lieutenant in the Royal Army Medical Corps

OUR TROOPS ON THE BORDER

Red Cross Hospital—The American Red Cross has already equipped eight base hospitals of 500 beds each, and others which will altogether accommodate about 15 000 patients are in process of organization About 6 000 Red Cross nurses are holding themselves in readiness to go when needed

Red Cross Hospital Bases—Plans for the enrollment of physicians of Philadelphia and for the establishment of free hospital bases in that city were discussed, July 14, at a joint conference of executive officers of the Southeastern Pennsylvania Chapter of the American Red Cross and representatives of the Philadelphia County Medical Society Dr Wilmer Krusen presided Dr Alfred Stengel advocated the appointment of recruiting committees in all the county medical societies, with a view to enrolling the local physicians as members of the Southeastern Pennsylvania Chapter The three classes are 1, those who volunteer to go wherever the government may choose to send them, including service in time of war and in foreign possessions, 2, those who volunteer to serve anywhere within the United States, and 3, those who volunteer to serve only within their own community The value of an efficiently organized Red Cross in combating community epidemics was also mentioned

Health and Sanitation—Dr Thomas Darlington, formerly health commissioner of New York, has been making an exhaustive study of camp conditions on our southern border on behalf of the Civic Federation He reports that the camps at Fort Sam Houston, Brownsville, Laredo, Eagle Pass and Del Rio are well located and well managed He commends the work of the medical corps of the army, and finds the food supply excellent in quantity and variety and has found no conditions that should produce disease Dr Eugene A Crockett, Boston, special agent of the American Red Cross in El Paso, Tex, reports that he has thoroughly inspected the camps in the vicinity of El Paso, Columbus, N M, and on the line of communication south as far as Colonia Dublan, Mexico He finds the general condition of troops excellent, that the sanitation of camps at Columbus, Ojo Fredrico, and Colonia Dublan is as near perfect as is possible to attain, that the health of the troops is excellent, and that there are plenty of available beds in all hospitals except at Fort Bliss, where there has been an immense number of volunteer troops There is nowhere a lack of medical supplies or hospital necessities He reports the need of books, magazines and reading material

Red Cross Base Hospitals—The American Red Cross has announced a list of mobile base hospitals, each of which has been organized or is being organized at an initial cost of $25,000, and also two field columns which connect the evacuation or transfer hospitals of the army with the base hospitals, each of these columns having been established at a cost of about $15,555 Each division of troops requires at least one base hospital which will accommodate 500 patients, and the professional staff of which consists of twenty-three medical officers, two dental surgeons, a chaplain and fifty trained nurses assisted by twenty-five volunteer aids The enlisted personnel numbers 153, and about fifteen civilian employees The hospitals already organized are as follows

Presbyterian Hospital, New York (equipment subscribed) Director, Dr George E Brewer, also Chief of Surgical Service principal assistant, Dr Alfred Stillman, chief of medical service, Dr Warfield T Longcope, chief of laboratory service, Dr Karl M Vogel, chief nurse, Miss Anna C Maxwell

Mount Sinai Hospital, New York (Equipment subscribed) Director, Dr Nathan E Brill, chief of surgical service, Dr Howard Lilienthal, chief of medical service, Dr Richard Weil, chief of laboratory service, Dr George Baehr, chief nurse, Miss Elizabeth A Greener

Bellevue Hospital, New York (Equipment subscribed) Director, Dr George David Stewart, also chief of surgical service, chief of medical service, Dr Van Horne Norrie, chief of laboratory service, Dr Charles Norris, chief nurse, Miss Clara D Noyes

New York Hospital, New York (Equipment subscribed) Director, Dr Charles L Gibson, also chief of surgical service, chief of medical service, Dr Lewis A Conner chief of laboratory service, Dr William J Elser, chief nurse, Miss M H Jordan

New York Postgraduate Hospital, New York (Equipment subscribed) Director, Dr Samuel Lloyd, chief of surgical service, Dr Edward W Peterson, chief of medical service, Dr Arthur F Chace, chief of laboratory service, Dr Ward J MacNeal, chief nurse, Miss Amy Patmore

Brooklyn, for Navy (Equipment subscribed) Director, Dr William B Brinsmade, also chief of surgical service, chief of medical service, Dr Luther F Warren, chief of laboratory service, Dr Robert F Barber, chief nurse, Miss Frances Van Ingen, assistant, Mrs Lillian H Read

Massachusetts General Hospital, Boston (Equipment subscribed) Director, Dr Frederic A Washburn, chief of surgical service, Dr George W W Brewster, chief of medical service, Dr Richard C Cabot chief of laboratory service, Dr J Homer Wright, chief nurse, Miss Sara E Parsons

Boston City Hospital, Boston (Equipment subscribed) Director, Dr John J Dowling, chief of surgical service, Dr Edward H Nichols, chief of medical service, Dr John Jenks Thomas, chief of laboratory service, Dr Arial W George, chief nurse, Miss Emma M Nichols

Harvard University, Massachusetts (Equipment subscribed) Director, Dr Harvey Cushing, also chief of surgical service, chief of medical service, Dr Roger I Lee, chief of laboratory service, Dr Richard P Strong, chief nurse, Miss Carrie M Hall

Lakeside Hospital, Cleveland (Equipment subscribed) Director, Dr George W Crile, chief of surgical service, Dr William E Lower, chief of medical service, Dr Charles F Hoover, chief of laboratory service, Dr Howard T Karsner chief nurse, Miss Grace Allison

Rochester, N Y Director, Dr John M Swan, chief of surgical service, Dr Charles W Hennington, chief of medical service, Dr William V Ewers, chief of laboratory service, Dr Charles C Sutter, chief nurse, Miss Emma Jones assistant, Miss Jessica Heal

Johns Hopkins Hospital, Baltimore Director, Dr Winford H Smith chief of surgical service, Dr John M T Finney, chief of medical service, Dr Theodore C Janeway, chief of laboratory service, Dr Thomas R Boggs, chief nurse Miss Bessie E Baker

Harper Hospital, Detroit Director, Dr Angus McLean, chief of surgical service, Dr Clark D Brooks, chief of medical service Dr Burt R Shurly, chief of laboratory service, Dr Preston M Hickey, chief nurse, Miss Emily McLaughlin

University of Pennsylvania, Philadelphia Director, Dr Edward Martin, chief of surgical service, Dr John B Deaver, chief of medical service, Dr Alfred Stengel, chief of laboratory service, Dr Allen J Smith, chief nurse, Miss Irwin

Pennsylvania Hospital, Philadelphia (Equipment subscribed) Director, Dr Richard H Harte chief of surgical service, Dr John H Gibbon, chief of medical service, Dr George W Norris, chief of laboratory service, Dr Edward B Krumbhaar, chief nurse, Miss Elizabeth Dunlop

Barnes Hospital, Washington University, St Louis (In process of organization) Director, Dr Fred T Murphy, chief of surgical service, Dr Malvern B Clopton, chief of medical service, Dr Walter Fischel chief of laboratory service, Dr Eugene L Opie, chief nurse, Miss Julia Stimson

Chicago, St Joseph, St Mary and Augustana Hospitals (Equipment subscribed) Director, Dr Albert J Ochsner, also chief of surgical service, chief of laboratory service, Dr Oscar E Nadeau, chief nurse, Mrs Julie Flekke

Chicago, Mercy and Wesley Hospitals (Equipment subscribed) Director, Dr Frederic A Besley, chief of surgical service, Dr Joseph F Jaros, chief of medical service, Dr Milton Mandel, chief nurse, Miss Daisy Urch

Cincinnati Director, Dr Charles A L Reed

University of Pittsburgh, Pittsburgh Director Dr Robert T Miller

Chicago, Presbyterian and County Hospitals (Equipment subscribed) Director, Dr Frank Billings, chief of surgical service, Dr Arthur Dean Bevan, chief of medical service, Dr Ernest E Irons chief of laboratory service, Dr Homer K Nicoll, chief nurse, Miss Mabel K Adams

Chicago, St Luke's and Michael Reese Hospitals (Equipment subscribed) Director, Dr Lewis L McArthur

Lincoln Hospital, N Y (Equipment subscribed) Director, Dr Frederick Gwyer, New York City

Rochester, Minn, Mayo Clinic Director Dr Edward S Judd

German Hospital, New York Director, Dr Frederick Kammerer

Field Columns (Ambulance Companies)

New York ($10,000 subscribed for equipment) Director, Dr T M Strong

Berkeley, Calif Director, Dr Robert T Legge

LONDON LETTER

London, July 17, 1916

The War

THE WOUNDED FROM THE BATTLE OF THE SOMME

The excellent preparations of dealing with the wounded have improved with the experience gained in the war The means of transport are so efficient that during the first stage of the Battle of the Somme the military hospitals in England began to receive men within twenty-four hours of their being wounded This rapid evacuation was carried out as the fighting was only begun, and it was necessary to keep the hospitals in France as empty as possible in case of pressure The casualties were mostly light and due to machine guns, the German artillery having been withdrawn before the British advance

THE STARVATION OF PRISONERS AT RUHLEBEN CAMP

The thing which causes most concern in this country—more than the heavy loss of life and limb in the war—is the treatment of the British prisoners in the hands of the Germans In a previous letter I gave the report of the American physician, Dr Taylor, to the American embassy at Berlin, which confirms what needed no confirmation, the evidence from many sources In a second report Dr Taylor states that since his last visit to the Ruhleben camp a sharp reduction has been made in the amount of foodstuffs allotted to the camp and that the diet now falls below that of the military prisoners in other camps One result of the present ration allotment is already seen in the fact that some of the Jews are appearing at the camp kitchen to secure food which is to them not ritualistically clean Sir Edward Grey on receiving this statement from Mr Page, the American ambassador, expressed the view that if the German government were not in a position to feed prisoners of war in their hands properly it was their duty to release them He stated further that "the German government is detaining a number of British civilians who are in a state of health entitling them to repatriation under the agreement relating to invalid civilians The German prisoners of war in this country, both combatant and noncombatant, are, as Mr Page is aware, adequately fed without the aid of parcels from abroad, and his majesty's government is therefore entitled to demand reciprocal treatment for the British prisoners in Germany, or if this is not possible their release" In a third report Dr Taylor states that the food allowed to the prisoners falls below the figures officially established for the month of June for prisoners of war by Professor Backhaus, head of the nutrition department of the German ministry of war Dr Taylor gives the accompanying table, which shows the terrible deficiency of the Ruhleben diets

COMPARATIVE DIETS

	Calories	Protein Gm	Fat Gm	Carbohydrate Gm
English laborer	3,655	184	71	570
German farm laborer (Ranke)	4 696	143	108	788
Standard diet for a man of moderate activity	2 820	100	100	360
Military prisoners of war in Germany	2 700	80	29	500
Ruhleben diet before reduction	1 580	59	12	308
Diet actually taken when increased by food left by other prisoners receiving supplies	2,725	98	24	523
Ruhleben diet since reduction	1,2[illegible]0	39	6	255
Reduced diet when increased by food left by others	1 930	55	10	410

It will be seen that both the flesh-forming protein and the heat-forming carbohydrates are much lower in the Ruhleben diet than in the prisoner-of-war diet, which is a bare minimum itself In the case of the fats, the situation is well nigh desperate. Dr Taylor writes 'All the fat present in the diet is incidentally contained in the several foodstuffs, and the diet is as fat-free as it is practically possible for a diet to be These figures indicate that the food supplied by the authorities to the interned civilians in Ruhleben during the past week, if applied to all the men, represented less than half of the requisite food units" A notable feature of the diet is the absence of vegetables, a very serious matter, and the substitution of saccharin for sugar, a substitution which was absolutely prohibited in Germany before the war Dr Taylor strongly protests against this and points out that less and less food has been coming in from the prisoners' friends abroad, and that, though the number of parcels has increased, the amount of food has gone down Also much of the bread received has been moldy The quality of the bread received from Switzerland has greatly deteriorated

WOMEN MEDICAL STUDENTS AT THE LONDON HOSPITALS

Before the war, women medical students were trained in London only at the Royal Free Hospital, the medical school of which is entirely devoted to that purpose The war has caused a deficiency of the medical students attending the various hospitals, many of whom have joined the army either as combatants or as ambulance men, while at the same time the want of physicians in the country has greatly increased the number of women entering the profession The consequence is that a number of the London medical schools—King's College, St Mary's, and St George's—which previously received only men have now been thrown open to women, and so far the experiment has been completely successful It is hoped that other hospitals will follow the example set

Raw Versus Boiled Milk

The question whether the protection against infection obtained by boiling milk is more than counterbalanced by loss of nutritive properties is still unsettled A woman physician, Dr Janet E Lane-Claypon, who is well known for her researches in regard to milk, has just issued a work under the authority of the Medical Research Committee of the national insurance act Her conclusions are in favor of boiling, though she is unable entirely to exclude disadvantages She is inclined to discount any vitalistic theory of the efficiency of natural milk as a constructive in infant feeding Thus she refers to the "so-called biologic properties of milk," to the "alleged" production of Barlow's disease (infantile scurvy) and rickets by the use of heated milk for infants, and to vitamin theories, which give results that are 'somewhat fragmentary" However, she admits that milk contains substances of unknown composition essential for life when milk is the sole diet But she considers that there is no evidence to show that these substances are destroyed by boiling, especially when the heat is not applied for prolonged periods and when a temperature not exceeding the boiling point is used The loss of vitamin she says if it occurs, is evidently not sufficient to affect the nutritive value of milk. On the other hand, Dr Lane-Claypon admits that some children thrive better on raw milk, others on boiled milk, and therefore individuality is an important factor

The Treatment of the Stiff Joints of Soldiers

A new clinic for the physical treatment of stiff joints and wounds has been opened in London under the management of a committee of eminent physicians and surgeons The arrangements are modeled on those at the Grand Palais in Paris, an institution which, it is stated, has saved the French government a very large sum in pensions—the figure is put as high as $5,000 000 per year On the ground floor are the "whirlpool baths," the latest modification of which is a bath in which water and air are pumped in together, giving a rushing, torrent-like effect Upstairs in a large room are mechanical appliances for exercising stiff limbs These are very ingenious, and comprise foot and hand machines and machines for the body There will be accommodation for sixty patients a day, and it is hoped soon to extend the scope

PARIS LETTER

Paris, July 6, 1916

The War

EXTRACTION OF BULLETS FROM THE BRAIN

Dr Cazamian, a naval surgeon, has just reported to the Société de chirurgie de Paris two cases in which he has practiced late extraction of projectiles from the brain at one sitting with the help of roentgenoscopy The following is the technic employed Two roentgenograms are made to locate the projectile The latter's position being thus approximately ascertained, trephining is performed on the nearest part of the cranium The dura mater having been incised, the Roentgen-ray screen is brought into action The foreign body, once detected is seized by forceps introduced into the brain substance and is thus extracted The operation takes very little time and is very simple, as is proved by Cazamian's two cases in each of which perfect recovery resulted In the first a shrapnel bullet penetrated, from the right side, the posterior frontal region, and, traversing the two hemispheres, lodged 1 cm below Broca's convolution The bony fragments at the orifice of entry were removed in the ambulance Right facial paralysis with aphasia of a subcortical type persisted Three months after the injury, the bullet was extracted as described, by trephining from the left side Immediately after the operation, complete aphasia was manifested for several days, but four months afterward there was no sign of any motor or speech trouble In the second case a rifle bullet penetrated behind the ramus of the left lower jaw and lodged on the upper border of the left petrous bone near the gasserian ganglion The patient suffered from very severe neuralgia of the trigeminal, rendering life scarcely bearable Trephining above the auditory meatus, Cazamian was easily able to extract the bullet, and the pains disappeared as well as certain visual troubles which had previously been noted

This question of extraction of bullets lodging in the brain is still under discussion Dr Rochard is of the opinion that the operation is indicated only when the presence of the foreign body causes motor or sensory nervous troubles, or in case of infection

Professor Quenu thinks, on the contrary, that the mere absence of symptoms does not justify abstention, for the patient is always at the mercy of untoward happenings which, after months or years, may suddenly occur and cause death This is not the same thing as saying that one should always remove foreign bodies lodged in the brain One must take into consideration the volume of the body and its situation If it is deeply placed and the operation promises to be difficult and serious, it is better to abstain If the projectile is extremely small and its presence causes no symptoms, one may leave it alone If the projectile is large and within reach, and if its extraction does not present too many difficulties, it is better to attempt it

Dr Walther is entirely of Quenu's opinion Dr Routier thinks that all foreign bodies of the brain should be removed, if the operation can be done without causing too much risk to the patient, because sudden death is frequently the result of leaving these foreign bodies It must be remembered, however, that, even after the removal of foreign body, there may be serious sequelae Thus a long time ago Routier removed a revolver bullet from the anterior cerebral lobe of a wounded man Five years afterward the patient, who had been in good health died suddenly

Dr Chaput stated that after localizing an intracerebral projectile by the Roentgen rays, he practices trephining at the point nearest to the projectile and then explores the cerebral substance with a small director When he detects, by this means, the bullet, he passes the forceps along the sound, seizes the projectile and extracts it The same subject was discussed at the Reunion medico-chirurgicale de la IV-e armee where Dr Potherat, surgeon of the hospitals of Paris, remarked that, in view of the evidence of frequent late infection often causing the death of patients in whose brain a projectile is lodged, many surgeons have gone so far as to recommend the extraction of bullets whenever it is materially possible Potherat communicated four such cases in which the operation had not been attended with any great difficulty In one of these cases the removal had been practiced early The patient recovered and remained well In the three others extraction was a secondary operation and was called for by complications occurring after an interval of from a few weeks to a month One of these last three recovered and two died, giving for four cases 50 per cent of recoveries On the whole, the results are such as to encourage surgeons to intervene The operation should be performed as soon as possible, and before the development of complications which may prove fatal

THE WAR AND THE SURGICAL CONGRESS

At its annual meeting, which has just taken place, the committee of the Association française de chirurgie decided that the French surgical congress will not be held during the war, and the Austro-German, Bulgarian and Ottoman members of the association were dropped from membership

THE FRENCH WOUNDED EMERGENCY FUND

The French Wounded Emergency Fund is an organization which took rise during the early part of the war, just after the retreat from Belgium and the battle of the Marne It has its headquarters at London, and is under the honorary presidency of the marchioness of Linlithgow The membership list includes the greatest names of the English aristocracy and those of a certain number of rich Americans who have contributed generously to its funds The work is officially approved by the French government, and is under the patronage of the British ambassador In France the honorary presidents are the Duchess of Rohan and M Etienne, former minister of war Very large sums are spent monthly on goods for the military hospitals such as dressings, bandages, clothes and supplies of all kinds The delegates visit every day the hospitals of the different regions to which they are assigned, and, with the assistance of the surgeons in chief of these establishments, draw up lists of their needs, which lists are sent to London Here a large staff of women volunteers packs and dispatches, as quickly as possible, these objects, thus demanded, to the French hospitals In 1915 more than 550 military hospitals were thus kept provisioned through the agency of fourteen delegates working in these regions May 31, the number of hospitals thus supplied was 1,198, and the total of the gifts exceeded in value 2,000,000 francs ($400,000)

THE BETTER UTILIZATION OF PHYSICIANS AND PHARMACISTS IN THE ARMY

Deputy Le Rouzic, having requested the minister of war to have drawn up for each region, by the directors of the health service, a list of physicians and pharmacists who have been mobilized and who were members of the departmental health commissions, with a view to utilizing their special competency in military life as it had been used in civil life, has received the following answer "The military health service does its utmost to utilize special competences in the interests of the sick and wounded Thus to each regional direction have been attached one assistant director, whose principal mission is to inspect the military establishments, hospitals, etc, and to take such measures as are necessary from the point of view of hygiene, assistant pharmacists attached to the directors, technical medical advisers, and assistant advisers whose role consists in studying and proposing such measures of prophylaxis as in the course of their inspections they have found necessary The list will be drawn up for each regional direction, and this will permit making use of the special knowledge of the persons whose names appear on this list They will, however, not be employed in their usual place of residence as long as they belong to classes which have not been discharged from military obligation

Personal

At its last sitting, the Academie de medecine elected two foreign associate members, Dr E Perroncito, professor of bacteriology at the University of Turin, and Professor Kitasato, director of the bacteriologic institute at Tokyo

At the sitting of June 26, the Academie des sciences elected two foreign corresponding members Dr Ramon y Cajal of Madrid was elected to fill the place of M Perez in the section of anatomy and zoology Dr Morat, professor of physiology at the Faculte de medecine de Lyon was elected for the section of medicine and surgery to succeed Dr Zambaco Pasha

Marriages

Mary Adelaide Gaston, M D, Cerro Gordo, Ill, to Mr Walter Malcolm McLeod of Vega Baja, P R, at Cerro Gordo, July 19

Wallace S Petty, M D, Rutledge, Mo, to Miss Helen Larson of Oshkosh, Wis, at Excelsior Springs, Mo, June 28

Clifford Clinton Hartman, M D, Pittsburgh, to Miss Carlotta Barnes Bailey of Aberdeen, Md, May 23

Adriel Clark Weakley, M D, to Miss Evelyn Guthrie both of Shelbyville, Ky, in Louisville, Ky, July 6

Kline V Menefee, Cincinnati, to Miss Fay Rogers of Falmouth, Ky, at Louisville, Ky, July 20

Robert Benoni Fleeger, M D, Lead, S D, to Miss Maude Morrison of Vancouver, B C, June 26

Robert Jennings Hanley, M D, to Miss Cathron Smith, both of Billings, Mont, July 15

David Corbin Streett, M D, to Miss Ferebe Buion Westcott, both of Baltimore, July 19

William Austin Tomes, M D, to Miss Gertrude A Ryno, both of Brooklyn, December 15

Bertram Arthur Richardson, M D, to Miss Ethel Wyllie, both of Emington, Ill, July 5

Edward John Miller, M D, to Miss May Janice Shannon, both of Chicago, July 26

George Arnold Moleen, M D, to Mrs May Luff Conway, both of Denver, July 20

Joseph Lewis Hutton, M D, to Miss Anna Jost, both of St Louis, July 17

Deaths

George Louis Painter, M D, Berkeley and San Francisco, University of California, San Francisco, 1896, aged 45, a member of the Medical Society of the State of California, acting assistant surgeon, U S Army, and later assistant surgeon, U S V, with rank of captain, who went to the Philippine Islands with the First California Infantry on the first expedition and served acceptably with that command and on the general staff, was marching in the Preparedness Parade in San Francisco, July 22, when a bomb was exploded and a jagged piece of metal struck him in the abdomen, causing injuries from which he died in the Emergency Hospital, a short time later

Surgeon Emlyn Harrison Marsteller, Lieutenant-Commander, U S Navy (ret), Washington, D C, University of Virginia, Charlottesville, 1872, aged 65, a Fellow of the American Medical Association and a member of the Association of Military Surgeons of the United States, who entered the Navy, Jan 12, 1876, and after participation in the Battle of Manila Bay as surgeon of the *Raleigh*, and fifteen years and three months of sea service and thirteen years and eight months of shore or other duty, was retired Sept 15, 1908, on his own application after thirty years' service, died at his home in Washington, July 23, from heart disease

John A McKlveen, M D, Chariton, Iowa, Bennett Medical College, Chicago, 1872, aged 81, local surgeon for the Burlington System, formerly state senator for the Fourth Iowa District, formerly president of the Iowa Eclectic Medical Society and of the Provincial and National Boards of Health, formerly president of the state board of health and of the State Board of Medical Examiners, vice president of the State Savings Bank, Chariton, and director of the Lucas County National Bank, died at his home, July 17, from cardiac asthma

William Abbott Phillips, M D, Evanston, Ill, Harvard Medical School, 1887, aged 55, a member of the Illinois State Medical Society, at one time lecturer on comparative anatomy in Northwestern University Medical School, Chicago, curator of the ethnologic museum of Northwestern University, a member of the American Association for the Advancement of Science, an archeologist of repute, chief of the medical staff or the Evanston Hospital, died at his hon in Evanston, July 24

Asa Stearns Wilcox, M D, Minneapolis, Hahnemann Medical College, Philadelphia, 1885, aged 57, professor of pra tice of medicine and diseases of women in the University of Minnesota College of Homeopathic Medicine and Surgery, Minneapolis, a member of the medical staff of the Minneapolis City Hospital and gynecologist to the Homeopathic Hospital, died at the home of his sister in Minneapolis, July 17, from pneumonia

Price Emerson Murray, M D, Atlanta (Ga) Medical College, 1886, aged 62, who retired from medicine on account of his business interests several years ago, a director of the Hibernian Building and Loan Association and Germania Savings Bank, Atlanta, and for several years local superintendent of the Western Union Telegraph Company and part owner of the Chattanooga *Times*, died in a sanatorium in Atlanta, July 20

Melville George McHugh, M D, Chicago, Creighton Medical College, Omaha 1900, aged 38, formerly a member of the Illinois State Medical Society, a specialist on tuberculosis and connected at one time with the Tuberculosis Hospital at Dunning, died in the Swedish Covenant Hospital, Chicago, July 24, from peritonitis following a surgical operation

Daniel Yingling, Huntington Ind (license Indiana, 1897), a practitioner since 1866, aged 76, for several terms president and secretary of the Huntington (Ind) Board of Health, a member of the school board and of the board of public works, who fell several months ago, sustaining a fracture of the hip, died at his home, July 17, from heart disease

Charles H Johnson, M D, Austin, Minn , McGill University, Montreal, 1884, aged 57, formerly a Fellow of the American Medical Association, a member of the Minnesota State Medical Association, twice mayor of Austin, died in the Great Northern Hotel, Chicago, July 25, from heat exhaustion

John Thomas Longino, M D, Fairburn, Ga , Southern Medical College, Atlanta, Ga 1893, aged 47, a member of the Medical Association of Georgia, formerly senator from the Thirty-Sixth Senatorial District and representative from Campbell County in the legislature, died at his home, July 19, from nephritis

Louis Augustus Woodbury, M D, Groveland, Mass , Harvard Medical School, 1872, aged 71, a member of the Massachusetts Medical Society and of the New Hampshire Association of Army Surgeons, a veteran of the Civil War, a practitioner and druggist of Groveland, died at his home, July 17

Alvah Conant Lewis, M D, Salt Lake City, College of Physicians and Surgeons in the City of New York 1877, aged 56, formerly a member of the Utah State Medical Association, died about July 14 at Ocean Beach, Calif, where he had gone in the hope of regaining health

James William Ashford, M D, Canyon City Ore , Cooper Medical College, San Francisco 1878, aged 59, formerly a member of the American Medical Association, for many years county physician of Grant County, Ore , died at his home, July 11, from chronic myocarditis

Preston G Stebbings, M D, Chico, Calif , formerly of Bradley, Ill , Rush Medical College, 1871, aged 83, for sixty-two years a practitioner, and for the last eight years a resident of California, died at his home, July 18, from cerebral hemorrhage

Joshua S Wood, M D, Irwinton Ga , Atlanta (Ga) Medical College, 1875, aged 72, also a druggist, for several years a county commissioner of Wilkinson County, Ga , and senator from the twenty-first district in 1888 and 1889, died at his home, July 20

John Martin, M D, Caldwell, Ohio, Miami Medical College, Cincinnati, 1869, aged 86, assistant surgeon of volunteers during the Civil War for more than fifty-two years a practitioner of Caldwell, died at his home, July 23, from heart disease

William Henry Erwin, M D, Oak Grove, Mich , Long Island College Hospital, Brooklyn 1877, aged 64, for nearly forty years a practitioner of Oak Grove, died at the home of his son in Howell, Mich , July 16, from carcinoma of the gallbladder

George Frederick Schug, M D, Williamsburg, Iowa, Jefferson Medical College 1904, aged 35 formerly a member of the Iowa State Medical Society died in the Mayo Brothers Hospital, Rochester, Minn , July 24, after a surgical operation

Thomas P Reville, M D, Folkston Ga College of Physicians and Surgeons, Baltimore, 1887, aged 56, a Fellow of the American Medical Association and a physician of Charlton County, Ga , died at his home, June 20, from heart disease

Romulus Alonzo Whitaker, M D, Kinston, N C , College of Physicians and Surgeons, Baltimore, 1885, aged 59, a member of the Medical Society of the State of North Carolina, died at his home, July 18, from cerebral hemorrhage

Leon Lewis Patterson, M D, Arapaho, Okla , University of Oklahoma, Norman and Oklahoma City, 1911, aged 35, a Fellow of the American Medical Association, died in the Clinton (Okla) Hospital, July 22, from typhoid fever

Clarence Appleton Kirkpatrick, M D Namkham, Burma, University of Pennsylvania Philadephia, 1910, aged 29, a medical missionary of the Baptist board at Namkham Northern Shan States Burma, died at his station recently

Thomas C Elmendorf, M D, Portchester, N Y , New York Homeopathic Medical College, New York, 1875, aged 62, formerly president of the village health board, died at his home, July 18 from cerebral hemorrhage

Boswell Henson Stillyard, Wheeling, W Va (license, West Virginia, 1882), aged 69, for forty years a practitioner, a member of the second branch of the Wheeling City Council, died at his home, July 17, from nephritis

James Smiley Bush, Jr, M D, Saranac Lake, N Y , Atlanta (Ga) College of Physicians and Surgeons, 1912, aged 31, formerly of Colquitt Ga , died in Albuquerque, N M , July 14 from tuberculosis

Herman G Tarter, M D, Chilhowie, Va , Medical College of Virginia Richmond 1911, aged 31, a member of the Medical Society of Virginia, died at his old home in Wytheville, Va , July 15

Roscoe Smith, M D, Auburn, Me , Harvard Medical School, 1870, aged 79, a veteran of the Civil War, representative from Turner Center in the Maine legislature in 1891, died at his home, July 8

William W Rambo, Alston, Ark (license, Arkansas, 1903), aged 63, a member of the Arkansas Medical Society, a practitioner since 1884, died suddenly at his home, July 16, from heart disease

John J Arnold, Thicket, Texas (license, Ninth Judicial Board Texas 1900), aged 43, physician and surgeon to the Foster Lumber Company, and the Arnold Mill, died at his home, July 19

Isaiah Titchanall Prickett, M D, Parkersburg, W Va , Miami Medical College, Cincinnati, 1876, aged 79, died at his home, May 18, from carcinoma of the intestines and bladder

Robert Benjamin Chisholm, M D, Summitt, Miss , Tulane University, New Orleans 1903, aged 52, a member of the Mississippi State Medical Association, died at his home, July 16

Herman Gasser, M D, Platteville, Wis , Northwestern University Medical School 1883, aged 59, formerly a Fellow of the American Medical Association, died at his home, July 6

Norman Webb Chance, M D, Little Falls, Minn , Rush Medical College, 1888, aged 57, formerly a member of the Minnesota State Medical Association, died at his home, July 2

George W Goodner, M D, Chicago, Northwestern University Medical School, 1869, aged about 75, died at his home in Chicago, in May from the result of accidental burns

Clarence V Gray, M D, Batavia, N Y , University of Buffalo, N Y , 1887, aged 50, proprietor of the Primrose Sanitarium, Batavia, died at his home, July 6, from diabetes

Henry H Stimson, M D, Saugatuck, Mich , Bennett Medical College Chicago, 1870, aged 92 a practitioner of Saugatuck for more than sixty years, died at his home, July 14

Charles Marcus Sandford, M D, Brighton, Ont , Trinity Medical College, Toronto Ont 1886 aged 53, died in Brighton Village, Ont , from diabetes, April 11

Armistead Burt, M D, Pinon, N M , Tulane University, New Orleans, 1861, aged 78 a veteran of the Civil War, died at Orange, N M , June 7

Freeman Austin Durkee, East Andover, N H (license, New Hampshire, 1897), aged 83, died in his home, April 29, from cerebral hemorrhage

Aaron L Bowman, M D, Rochester, Ind , Illinois Medical College, Chicago, 1908, aged 40, died at his home in Talma, Ind , July 5

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

WINE OF CARDUI SUIT

(*Continued from page 385*)

June 6, 1916, Morning

The Court met pursuant to adjournment Mr Williams, attorney for the plaintiff, the Chattanooga Medicine Co, announced that by mutual agreement depositions which had not been read would be treated as read and as in the record It is the intention of the plaintiffs to close their case by Thursday, June 8, at noon

TESTIMONY OF DR THOMAS G ATKINSON

Dr Thomas G Atkinson was called as witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR WALKER

Dr Atkinson testified that he is a physician and medical journalist

Q—From what school, doctor, did you graduate, and please tell us the various positions you have held *A*—In 1887—I think I am right on the date—I took what is called the Intermediate Bachelor of Science at the University of London I then took four years' medical course partly in St Bartholomew's and partly in St Mary's London, but of course English Medical Schools don't graduate one as they do over here One simply gets a license from the Royal College of Physicians to practice

Immediately after that I spent a year in Paris, which, however, was nothing but informal, unsystematic attendance at the hospital clinics at the Hotel Dieu and the Hotel Charlotte and a few others

Later I came to this country and took a special course in homeopathic medicine at a school in Cleveland which I believe at that time was called the Cleveland Homeopathic Hospital College It has changed its name since

Later I graduated at the Chicago College of Medicine and Surgery in this city, with the degree of M D

Q—What is your age, please? *A*—About 46

Q—Now, doctor, what schools have you been connected with as a teacher, if any, and in what branch of your profession? *A*—I was Professor of Physiology for two or three years in the Chicago College of Medicine and Surgery for one year I was professor of physiology at the American Medical College in St Louis for three years I was associate professor in neurology in both these places at the same time and I was professor of therapeutics for two years in the Jenner Medical College

I am at present the editor of the *Medical Standard* published in this city, and the *Medical Brief*, published in St Louis, and I was formerly Associate Editor of the *American Journal of Clinical Medicine* but I am no longer associated with that

Q—Are you in the practice of your profession, also, doctor? *A*—Yes, sir

Q—Where is your office? *A*—At 14 W Washington Street

Q—How long, or over what period of time have you been engaged, as a part of your labor, as the editor of medical journals, or associate editor, or writing on medical subjects? *A*—Since 1906, about 10 years

Q—And are you connected with that work now? *A*—Yes, sir

Dr Atkinson stated that in the last three years he has confined himself to ophthalmology and has had the clinical experience which comes with his teaching positions He defined a therapeutist as a man who has some expert knowledge of the application of drugs and other remedial measures to disease He lectured as a full professor on this subject for two years, and also lectured at the Chicago College of Medicine and Surgery in Dr Funck's department In his journalistic work was included review of scientific works, articles and books He is familiar with the diseases of women

The witness testified that Mr Hough engaged him as a special expert to look up literature and make researches on the subject of the drugs at issue about a year ago last March He has never used carduus benedictus in his practice He looked it up in the literature He was asked to state the history of carduus benedictus Objection was made, the Court stating that if the witness could give the bibliography on the subject the question might be competent The Court, after discussion, ruled that the witness could not answer questions as to the use of carduus benedictus as a medical agent as read from books The same ruling was made on viburnum prunifolium

Dr Atkinson stated that he is familiar with the pelvic organs of the female He defined a pharmacologist as a laboratory man of the therapeutist who furnishes him with just one of the data on which a therapeutist bases his therapeutic judgment and knowledge

The witness stated that he has never done any experimenting in pharmacology He has seen it done and has directed its experimentation in the physiologic laboratory He stated that a negative pharmacologic test as pharmacology at present stands would certainly not indicate the therapeutic value or valuelessness of the drug A therapeutic test, he stated, includes a pharmacologic test and a clinical test, and he believes there is a difference between the action of drugs on a well person and on a sick person He has used the fluidextract of viburnum in his practice in any condition in which he thought a uterine tonic and sedative was indicated, chiefly in dysmenorrhea, menorrhagia, threatened abortions, and in any diseases of the female pelvic organs in which there was pain or tenseness It would also be indicated in various inflammations

From his reading Dr Atkinson believes that carduus benedictus has therapeutic value He regards it as being in the same class as viburnum, and, therefore, having the same indications as viburnum He considers the two drugs as synergistic—namely, when two drugs of similar action are combined and given in combination the joint action, so far as their similarity goes, is greater than the added sum of the two

Dr Atkinson defined a medicinal wine as a preparation, an extract of a drug made either with the wine itself, or in a weak solution of alcohol, whose alcoholic content is approximate to that of the wine He considered that the medicine known as Wine of Cardui, assuming that it contained the extractives of 30 grains of carduus benedictus and three grains of viburnum prunifolium in each dose, in a solution of 20 per cent alcohol, to have therapeutic value in diseases peculiar to the female He believes that certain drugs have a selective action on certain parts of the body He stated there were certain tonics which have such action—he could not tell how they act, but he knows that they do act There are certain drugs, he believes, which have a selective action on the uterus of the female, that is, they show their greatest effect on the uterus, but they also have effect on other organs He mentioned ergot, hydrastis helonias, viburnum prunifolium, viburnum opulus, sepia and carduus benedictus He stated that the medicine named (Wine of Cardui) would be of value in amenorrhea, menorrhagia metrorrhagia and dysmenorrhea

Q—Are medicines ever given—what I am trying to get at is this amenorrhea is suppression? *A*—Yes

Q—And menorrhagia is excessive flow? *A*—Yes

Q—Will you explain—you said it would in all of them—how a medicine can be of value in suppression and in an excessive flow, that is in what appears to be opposite conditions Please tell the jury, will you? *A*—Well, for one thing—

Q—Doctor, when you hold your head down, you drop your voice *A*—For one thing, the two opposite manifestations may be due to the same underlying cause For instance, just as an illustration, an endometritis which is an inflammation of the inside of the womb, may, in different women and even in the same woman at different times produce at one time an amenorrhea, a suppression of the menses, and at another time a flooding or menorrhagia At other times, neither one nor the other but a dysmenorrhea a painful menstruation, and inasmuch as it is the inflammation of the womb that lies at the root of all these three troubles, the same remedy may and probably will help them all That is one reason why such a thing may happen

I think there is a broader reason that we ought to bring out, and that is, that medicines don't do the thing at all Medicine don't walk into a body and pick up an organ and move it around Medicine don't go in and cure disease Medicines simply stimulate the proper agencies within the body—

Q—Naturally there you mean? *A*—The recuperative and defective agencies of the body itself, to do its own recovery, and the body is very intelligent in its recuperative work I think that must be quoted as one reason why drugs often seem to help seemingly opposite conditions

Q—When you use that second phrase, this second reason that you give does that apply generally to all drugs? *A*—Yes Oh, there are a few instances where we give drugs for the direct mechanical—or as we call it physiological action of the drug We sometimes give enormous doses of irritative cathartics out of which we expect to get just the direct irritative effect of the drug But, as a rule, the giving of medicines is not with any idea that the medicine itself is going in there to do something wonderful, but that the medicine is going to stimulate the natural recuperative and defective agencies of the body to do its own recovering

The witness named several conditions of sterility in which the medicine indicated might be of value He stated that medicine is indicated in puberty when there is suffering In his opinion 80 per cent of women suffer at the time of puberty He believes that the medicine named would be of therapeutic value in these cases In his judgment general and special tonics are indicated in pregnancy to aid childbirth In his opinion Wine of Cardui is a general and a special tonic He does not see how it could mask a cancer in a woman at the time of the menopause He considers Wine of Cardui a helpful tonic and a good combination for a woman during the menopause

There was described to the witness the experiment performed by Dr John Clarence Webster He considered this experiment as having absolutely no value as a test for the therapeutic value of a medicine when given through the mouth to a woman suffering with female troubles The fact that, injected into the circulation, it did not produce any effect on the respiration or the circulation would not, in his opinion, show anything with reference to the therapeutic value of the same drugs given by the mouth to women suffering with female trouble because there are dozens of valuable drugs that would not influence the circulation or respiration under those circumstances

Q—Well will you tell us then, if you please, how such drugs could act if taken through the mouth where they do not affect the respiration or the circulation and, if you can, illustrate that? *A*—Well just as one illustration, we will take iron Iron, whether it is taken through the mouth, or whether it is injected, as you suggested in your hypothetical question, would not have made the slightest difference in the tracings of the respiration and the blood and the pulse and yet I suppose everybody admits the therapeutic value of iron taken through the mouth

There was called to the attention of the witness a query and minor note published in The Journal as to the use of alcohol in medicine and the witness was asked to interpret a statement from this query The Court ruled that the statement was perfectly plain and the jury could interpret it for themselves

The witness stated that at least an ounce of alcohol could be taken by an adult during twenty-four hours, without harm if taken through a period of twenty-four hours and properly diluted He stated that he could not see how Wine of Cardui taken in the dosage indicated would tend to heighten the passions of a young girl at puberty, nor could he see how it would give her an alcoholic habit He did not believe it would produce disease in a pregnant woman or give the woman or the child an alcoholic habit

Dr Atkinson stated that there are many drugs used by physicians in alcoholic preparation He believes that the inclusion of a drug in the pharmacopeia means that it is in common use at the time the pharmacopeia is made up, its inclusion in the dispensary does not mean anything

Objection was made and sustained on questions as to the inclusion of carduus benedictus in various pharmacopeias

The witness stated that he has read the Home Treatment Book for Women issued by the Chattanooga Medicine Company in 1913

Dr Atkinson stated that he is not competent to say what proportion of women suffering with female troubles are surgical cases There are cases that are nonsurgical and he believes that Wine of Cardui in the dosage named would be indicated in such cases He could not say how the medicine acts in remedying displacements The medicine does not do it, but stimulates the body process so that they do it There is no doubt that under the influence of medicine many of these cases of displacement do become righted, he believes There are, in his opinion, displacements which do not give rise to symptoms

The witness defined vaginitis and inflammation of the vagina and stated that this medicine would be of therapeutic value in such cases He also believes it would be of therapeutic value in cases of leukorrhea or whites

An adjournment was taken until 2 o'clock the same day

June 6, 1916, Afternoon

The cross-examination of Dr Thomas George Atkinson was suspended temporarily

TESTIMONY OF MR HENRY CLAY EVANS

Mr Henry Clay Evans was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR WILLIAMS

Mr Evans testified that he has resided in Chattanooga for fifty-two years He has been commissioner of education, alderman several times, mayor twice, a member of congress, first assistant postmaster general, commissioner of pensions, counsel general to London, commissioner of the city, and commissioner of education and health of Chattanooga He has known Mr John A Patten and Mr Z C Patten, Jr, ever since they were boys The witness was asked as to the reputation of John A Patten and of Z C Patten, Jr, prior to April, 1914, for honor, integrity and fair business dealing in that community Objection was made to the question

After considerable argument the Court stated that he had announced the presumption that, until the contrary is shown, these men are good citizens, and he had decided to let the evidence in on that basis Exception to the ruling was made by the defendants

The witness stated that the reputations of the Messrs Patten were very good He never heard their reputations questioned

TESTIMONY OF MR FOSTER W BROWN

Mr Foster W Brown was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR WILLIAMS

Mr Brown testified that he has been practicing law in Chattanooga for thirty years He has been living in Chattanooga for twenty-five years He was a member of Congress one term, attorney general to Porto Rico two years and attorney general of his Chattanooga District for eight years He testified to the same extent as the last witness regarding the reputation of Messrs John A. and Z C Patten, Jr

Cross-examination was waived

Objection to the testimony was made, overruled and exception taken

TESTIMONY OF MR J M LITTLETON

Mr J M Littleton was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR WILLIAMS

Mr Littleton testified that he has lived in Chattanooga for five years He is the mayor of Chattanooga He testified to the same extent as the two previous witnesses

CROSS-EXAMINATION BY MR SCOFIELD

Q—What is your business Mr Littleton? *A*—Beg pardon?

Q—What is your business? *A*—I am a lawyer

Q—Is there any other business you are engaged in? *A*—I am mayor of Chattanooga

Q—Are you engaged in any business besides that? *A*—No, sir

Q—You are not? *A*—No, sir

Q—Never have been? *A*—Well I am—I have owned a farm, I am a pretty good farmer

Q—Your name is J L? *A*—J M

Q—J M? *A*—Yes sir

Q—Have you been connected with any manufacturing companies? *A*—Why I have had small stock in manufacturing companies not enough to bring forth great dividends different companies

Q—What companies have you been in? *A*—Well I do not know that I could name them sir several small ones

Q—Have you been associated with any chemical company? *A*—Oh yes I own some stock in a chemical company

Q—What is the name of that company? *A*—Anedemin Chemical Company I own stock in it

Q—What is the business of that company? *A*—That company manufactures a medicine

Q—Who is your partner down there in the practice of law? *A*—My partners are my nephews, my brother's two sons Littleton & Littleton

Q—Is there a man down there by the name of Estil? *A*—Estil?

Q—Yes *A*—My father in law, Judge Estil was my partner when I lived at Winchester, yes sir

Q—This chemical company has their offices right above yours? *A*—No sir they did have in Winchester in a building that was owned by me

Q —That was a proprietary medicine that they were making and selling? A —Yes, sir

Q —A secret formula? A —Yes, sir

The attorneys for the plaintiff moved that the cross-examination be stricken out The motion was denied and exception taken

TESTIMONY OF MR ALBERT L KEY

Mr Albert L Key was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR WILLIAMS

Mr Key testified that he is retired from the U S Navy and is at present vice president and general manager of the Volunteer State Life Insurance Company, at Chattanooga He has resided in Chattanooga since 1860 He testified to the same extent as the previous witnesses

CROSS EXAMINATION BY MR T J SCOFIELD

The witness testified that Mr Z C Patten, Sr, is president of this insurance company

TESTIMONY OF MR DWIGHT PRESTON MONTAGUE

Mr Dwight Preston Montague was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR WILLIAMS

Mr Montague testified that he has resided in Chattanooga since 1875 He testified as to character in the same way as previous witnesses

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness named the companies in which he is interested and stated that neither of the Pattens had stock in any of these companies

TESTIMONY OF DR THOMAS G ATKINSON (*continued*)

Dr Thomas George Atkinson resumed the stand for the plaintiff

CROSS-EXAMINATION BY MR T J SCOFIELD

Q —Doctor, do you know what Wine of Cardui is composed of? A —No, not of my own knowledge

Q —You know what some of the contents of Wine of Cardui are, do you not? A —I know, of course, that it contains alcohol, of my own knowledge

Q —Well, you know more than that, don't you? A —No, only from being told

Q —You know what the Chattanooga Medicine Company relies upon, do you not, for the action which they claim for Wine of Cardui A —Oh, yes

Q —What is that? A —Viburnum prunifolium and carduus benedictus

Q —You have been in the employ of the Chattanooga Medicine Company for some time, haven't you, doctor? A —Yes, sir

Q —You have been in the employ of the company for something over a year? A —Yes, sir

Q —What compensation do you receive?

Mr Walker —That is objected to

Mr T J Scofield —Have you a stipulated, agreed compensation, with the Chattanooga Medicine Company, or their representatives, for your services? A —Yes, sir

Q —What is that, doctor?

Mr Walker —That is objected to

The Court —He may answer This is an agreed compensation

To which ruling of the Court the plaintiff, etc, excepted
A —During the time that I was working on research work I received
$35 a week During the time that I am in court, I receive $50 a day
Mr T J Scofield —Now, what length of time were you engaged in
research work? A —I don't quite catch what you mean, Mr Scofield?
Do you mean how much actual time?
Q —You say you were to receive $35 a week while doing research
work Now I am asking you how much time you put in, in research
work, on research work? A —I want to answer your question the
way you want it
The Court —No, you got $35 for a certain kind of work How much
of that kind of work did you do? That is the question A —Oh, it
varied from week to week Some weeks I would do very little, and
some weeks I would put in whole days on it
Mr T J Scofield —The question I am asking you, is how many
weeks of research work you did You say you were receiving $35 a
week for it A —No, I said I was receiving a fixed stipend of so
many dollars a week to hold myself at the disposal of the Chattanooga
Medicine Company
Q —That is, while you were doing research work? A —Yes
The Court —Was that all the compensation you received for all
kinds of service? A —Yes, except when I was in court
Mr T J Scofield Q —Or when you were away from home, attending
court for them? A —Yes

Q —For instance, you went down to Chattanooga on the 29th of January, didn't you? A —Yes, sir

Q —And from that day on, until you returned to Chicago, you were receiving $50 a day? A —Yes, sir

Q —And your expenses? A —Yes, sir

Q —And this case was called on the 21st day of March here in this court? A —Yes, sir

Q —And since that time, you have been receiving $50 a day, for your services? A —Yes, sir

Q —Now, in addition to the research work, you have done considerable correspondence, haven't you, in connection with this case here, or in behalf of your client in this case here? A —Oh, I do not think you can call it considerable, I have done some correspondence, but I should say very little

Q —You have written around to doctors, haven't you, over the country, trying to interest them to come here and testify in this case? A —Yes, sir

Q —Well now, did you do that as research, or as under what employment? Or was that special work? A —No, that was all in the same group I should rather change the word "research"

Q —Well, change it then A —I should say that I was paid to prepare the medical end of the case to a certain extent

Q —Then it is true that you prepared the medical end of this case? A —Partly, yes, to a great extent

Q —What say? A —To a great extent

Q —In other words, the procuring of witnesses and the consideration of the medical phases of this case, has been under your control and direction largely, has it not? A —Very largely, yes, sir

Q —Now, doctor, you say you have not been practicing medicine for three years? A —Not general medicine, no

Q —Well, what have you been doing during that time? I mean, you say in general practice — not general practice, and I am asking you what you mean by that? A —I mean that I have been doing nothing but special work, eye work

Q —Then, so far as the treatment of disease is concerned, aside from the eye, you have not been engaged in the practice of your profession for three years? A —No, sir, that is true

Q —Did you ever practice your profession? A —Oh, yes

Q —Where? A —I practiced down in Republic, Ohio, in a —

Q —How large a place is Republic, Ohio? A —It is a little country place, about 700 or 800 inhabitants

Q —What year were you at Republic, Ohio, or years? A —I think it was in around 1893, '94 or '95, somewhere around in there

Q —Did you practice your profession down there through those three years according to your present recollection? A —Yes

Q —Is that right? A —Yes

Q —Where did you go to from Republic, Ohio? A —I went to Cleveland, Ohio

Q —How long were you in Cleveland? A —I cannot exactly remember, but I should think until about 1900 — I mean the next ten after that, 1910, somewhere along in there

Q —Then you left Republic along in 1895? A —As far as my recollection goes, yes, sir

Q —1895 A —I am giving the dates as near as I can remember them

Q —I don't mean to ask you to say exactly, probably you cannot do that, but give your best recollection A —Yes

Q —Then you left Republic you think in 1895, and went to Cleveland? A —Yes, sir

Q —You were in Cleveland for 10 years, ten or 15 years? A —No I said, the next ten number, the next ten number I was in Cleveland about five years

Q —About five years? A —Yes, I should say so

Q —So that you left Cleveland in about 1900? A —I think so, yes sir

Q —Did you practice medicine while you were in Cleveland? A —No sir

Q —What were you doing while you were there? A —I was engaged in business

Q —What kind of business, doctor? A —Oh, two or three kinds of business, I was just earning money, that is all

Q —How were you earning it? A —I think I worked for a railroad company I think I worked for a firm of lawyers I may have worked for somebody else, but I don't remember

Q —Don't you know what you did while you were in Cleveland for five years? You say you think you worked for a railroad company? A —I know I did that

Q —Then you say you think you worked for a firm of lawyers? A —Well, I know that

Q —Did you or didn't you? A —I did, yes, that is true

Q —What firm of lawyers did you work for there? A —Williams, Cushing & Clark, they were in those days I think they are changed now

Q —Did you do anything else during the five years you were there other than work for the railroad company, and Williams, Cushing & Clark? A —I don't remember that I did

Q —If you did, you don't remember it? A —No, sir

Q —But anyhow you know you did not practice any medicine? A —Oh, I know that, that is certain, I did not practice any medicine

Q —Now, while you were down in Republic, Ohio, three years, did you do any practicing there? A —Oh, yes

Q —What? A —Yes, sir

Q —Did you engage altogether during the time you were at Republic in the practice of your profession? A —As far as I remember, yes

Q —Well, you know you were not doing anything else, don't you? A —As far as I remember I was not.

Q—Did you have a pretty good practice there, doctor? A—Oh, yes pretty good country practice

Q—In a town of 700 or 800 inhabitants? A—Yes, and the country side

Q—Yes you rode around the country some? A—Yes

Q—Were you associated with any one in the practice of medicine there? A—No sir

Q—When you left Cleveland, where did you go? A—Came to Chicago

Q—What did you do after you came to Chicago? A—I still worked

Q—What? A—I still worked

Q—What kind of work were you doing, doctor? A—Clerical work

Q—Well, you say you were not practicing medicine? A—What?

Q—You were not practicing medicine? A—I was not practicing medicine no sir

Q—Were you licensed to practice down in the State of Ohio, then? A—If I remember rightly, there was no license required

THE COURT—The question is, were you licensed? A—No, sir

Mr T J Scofield—I am asking you if you were licensed to practice? A—No

Q—You were practicing down in Ohio in 1893 and 1894 and 1895 without any license? A—That is my recollection, yes.

Q—When you came to Chicago you did clerical work here? A—Yes

Q—You did not practice medicine? A—Yes

Q—Now, did you continue to do clerical work? How long did you continue that? A—Till about 1904

Q—So you were four years doing clerical work? A—Yes.

Q—And that means you were nine years out of your profession? A—Yes

Q—Now the clerical work which you did here was it exclusively clerical work your work? A—I don't know exactly what you mean

Q—Well did you do anything else than clerical work? A—Not that I remember of no

Q—Whom did you work for? A—I worked for the St Louis, Peoria & Northern Railway, and I worked for a coal company, I think

Q—What coal company? A—The Mindink Coal Company

Q—What did you do for the railroad company? A—Clerical work and tariff work

Q—In whose office were you? A—In the office of J N Faithorn's Son but I forget his name

Q—What else did you do besides those things after you came to Chicago? A—Nothing that I know of

Q—Did you work in the evenings those days? A—I may have, I do not know

Q—You don't remember whether you did or not Commencing in 1904, what did you do? A—Commencing in 1904, I became the editor I think that year of the *Medical Standard*

Q—The *Medical Standard?* A—Yes.

Q—Where was it published? A—In Chicago here on Dearborn Street.

Q—Did you own it? A—Oh no

Q—Who owned it and operated it? A—George P Engelhard

Q—What kind of a publication was it? A—A medical journal, I don't know how else to describe it.

Q—Is it in existence at the present time? A—Yes, sir

Q—How long did you continue editor of that journal? A—Until 1912

Q—Well, did you commence as editor in 1904? A—My recollection is it was 1904

Q—Or 1905? A—Yes sir 1904 or 1905

THE COURT—And you started right in as editor? A—Oh, yes

Mr T J Scofield—You started to work as editor right away A—Yes.

Q—What medical experience had you had before that warranted your becoming editor of the medical journal at that time?

Mr Walker—That is objected to

THE COURT—Objection sustained

To which ruling of the Court the defendants, etc, excepted

Mr Walker—I withdraw the objection

THE COURT—You gentlemen will have to settle that among yourselves Two of you object, and one withdraws it

Mr Walker—I withdraw it, as far as I am concerned

Mr T J Scofield Q—Now, doctor did your work as editor of the journal require all your time? A—No, because I was at that time attending school

Q—You were what? A—I was at that time attending school

Q—What school did you attend? A—The Chicago College of Medicine and Surgery

Q—You graduated there, didn't you? A—Yes, sir

Q—When did you graduate there? A—I think in 1905

Q—You matriculated in 1905 too, didn't you? A—Yes sir

Q—Now when you say you matriculated, what do you mean by that? A—Entered the college

Q—You were also professor there at that time, were you not in 1905? A—No sir

Q—What? A—No sir

Q—You were not? A—No sir

Q—Did you graduate the same year you matriculated? A—I did, yes sir

Q—Did you attend lectures there? A—Yes sir

Q—Did you deliver lectures during that year? A—No sir

Q—When did you commence delivering lectures there? A—I think about 1907 I am not sure it might have been 1906

Q—Let us see the catalogue of that institution for the years 1905 and 1906 represented what part of those two years? A—Well one catalogue would represent, of course, from the September of 1904 to the spring of 1905, and the other catalogue would represent from the fall of 1905, on until the spring of 1906

Q—1905 and 1906? A—Yes, sir

Q—Well, you were instructor in physiology, were you not, and so indicated in the catalogue of the American College of Medicine and Surgery in 1905 and '06? A—If the catalogue says so, that is true

Q—I am asking you

THE COURT—Let the witness see it, it may refresh his memory [See Footnote 1]

Mr T J Scofield Q—I am asking you if it is not a fact, if that is not a fact and I will hand you this catalogue? A—That seems to be true, yes, sir

Q—And that same catalogue shows that you matriculated that year, don't it? A—No, it shows that I graduated that year

Q—Doesn't it show that you matriculated and graduated and isn't that all shown in this catalogue of 1905 and 1906? A—I don't know whether it is or not

Q—Well, take it and look it up and see whether or not it is not A—No, it shows here that I was a matriculant in 1904 and '05 session, which was previous to this

Q—When does it show you graduated? A—1905

Q—1905? A—Yes

Q—Then in 1905 and 1906 you were lecturing on physiology? A—Yes sir

Q—So that if I understand you right now, you practiced medicine down in Republic, Ohio a little town of 800 or 900 inhabitants for three years and then you passed out of the practice of medicine in 1905, and did not resume it and you were engaged then in clerical work of different kinds? A—Yes

Q—Until the year 1904 when you matriculated in this institution, and also became the editor of the *Medical Standard* or the *Standard Journal* is that right? A—Yes sir

Q—You matriculated in 1904 1905 and you graduated in 1905, did you not? A—Yes sir

Q—And in that year you were put down in this catalogue as a lecturer there? A—Yes sir

Q—Now had you ever practiced medicine before you went to Republic Ohio? A—No sir

Q—Had you ever taught physiology before you taught it here? A—I don't remember

Q—Well now think for a moment whether you ever did or not A—I don't remember

Q—Had you ever taught physiology before? A—I cannot remember Mr Scofield

THE COURT—Did you ever teach anywhere before? A—I don't remember now

Mr T J Scofield Q—You don't remember? A—I don't remember, no

Q—Well now when you teach physiology—I don't distinguish between lecturing and instructing—did you ever lecture or were you ever an instructor in physiology anywhere? A—I don't remember ever being

Q—If you ever have been you would have remembered that fact wouldn't you? A—I don't know whether I would

Q—Why doctor were you not an instructor in physiology in St Mary's Hospital College of London, England? A—I believe I did do some instructing in St Mary's

Q—You believe you did? A—Yes sir

Q—Is that such an insignificant thing that you had forgotten about it? A—The kind of instructing I did over there would certainly be rather insignificant yes

Q—Is it not true that you were not instructor over there at all? A—It is not true no sir

Q—How is that? A—It is not true, no sir

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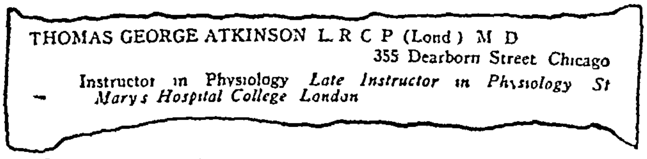
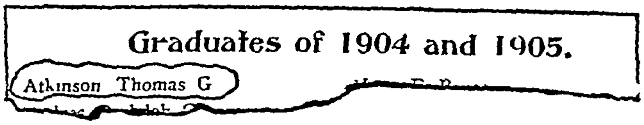
[1] The witness was then handed the Annual Announcement of the American College of Medicine and Surgery published in 1905 This announcement contained Atkinson's name as a member of the faculty as a matriculant for 1904 1905 and as a graduate of 1904-1905 These items are here photographically reproduced in miniature

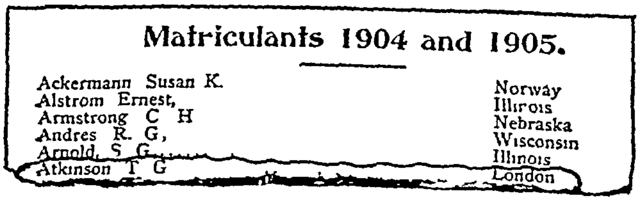


THOMAS GEORGE ATKINSON L R C P (Lond) M D
355 Dearborn Street Chicago
Instructor in Physiology *Late Instructor in Physiology St Mary's Hospital College London*



Graduates of 1904 and 1905.

Atkinson Thomas G



Matriculants 1904 and 1905.

Ackermann Susan K.	Norway
Alstrom Ernest,	Illinois
Armstrong C H	Nebraska
Andres R. G,	Wisconsin
Arnold, S G,	Illinois
Atkinson T G	London

Q—How long since you have remembered that you might have been an instructor over there at that institution, in London, England? *A*—I don't understand your question

Q—I asked you if you had been an instructor in physiology, and you said you did not know whether you ever had before, until you commenced as an instructor here You said you did not remember whether you had or not *A*—Yes

Q—Now then, you say you believe maybe you did do some instructing in London? *A*—Yes

Q—You knew that when you were an instructor over here didn't you, at this American College of Medicine and Surgery? *A*—Perhaps I did

Q—You did, and you told them about it and it was put down in the catalogue Didn't you see that when I handed that to you? *A*—No, I did not notice it

Q—With that marked on the side? *A*—No, sir, I just looked and saw my name

Q—Now it comes back to you, that you did at one time act as instructor in St Mary's College Hospital, over in London, England, in physiology? *A*—Yes, sir

Q—So that when you said a while ago that you had never been an instructor in physiology, until you became an instructor here, in this institution, you were mistaken, were you?

Mr Walker—That is objected to

The Court—He said he did not remember having been one elsewhere

Mr T J Scofield *Q*—Now then, doctor, I hand you a letter here [see Footnote 2] and ask you to look at it, and see if you recognize any of the signatures there, or the letterhead and tell me whether or not the matter that is stated in that letter is true or untrue?

Mr Walker—That is objected to

A—I do not recognize it, and I do not know whether it is true or untrue I do not recognize the name or the letterhead at all

Mr T J Scofield—You read the body of this letter?

Mr Walker—That is objected to as immaterial

The Court—He may answer

To which ruling of the Court the plaintiff, etc, excepted

A—Yes

Mr T J Scofield *Q*—You read it, but you don't know whether it is true or untrue? *A*—No, I do not

Mr Hough—Let me see the letter

The Court—You had better have it identified by the reporter

(The paper is marked Defendants' Exhibit A, 6-6-16)

Mr T J Scofield—I will ask you now, if it is not true, doctor—do you want to see it Mr Hough?

Mr Walker—Not at all, I don't care anything about it

The Court—Under our local law in Illinois, it might be—

Mr Walker—It might be admissible now, because Hough looked at it, I know

Mr T J Scofield *Q*—Now, doctor, after looking at that letter, which I just showed you, does that refresh your memory in any way, shape or form?

Mr Walker—On what?

Mr T J Scofield—As to anything As to any experience which you had in London

Mr Walker—World without end, Amen

A—No, it does not

Mr T J Scofield—Now, if the Court please, let us abstain from any such remarks I think we had better conduct this case properly

The Court—Yes, I think the objection was not in proper form, so that it will be overruled

Mr T J Scofield *Q*—Now then, doctor, I will ask you this question After having looked at this letter does it refresh your recollection in any way as to whether or not you ever at any time taught physiology in St Mary's Hospital Medical School in London?

Mr Walker—Mr Hough made an objection, and I second it, it is immaterial, irrelevant and incompetent

The Court—He may answer

To which ruling of the Court the plaintiff, etc, excepted

A—No, it has no effect on my memory at all

The Court *Q*—Were you ever on the official staff of instructors at St Mary's? *A*—No, sir

Q—Were you ever paid for instructing? *A*—No, sir, whatever instructing I did, was simply done in an informal way I never was on the board or list of instructors at all

Q—That is, some other student asked you to help him? *A*—Well, more than that, I did a little informal instructing

Q—As a tutor? *A*—Yes

Q—Tutoring other boys that were studying there? *A*—Exactly

Mr T J Scofield—Well then, doctor, when you had placed in this catalogue of the American College of Medicine and Surgery, 'Thomas G Atkinson, L R C P London, Instructor in Physiology, Late Instructor Physiology, St Mary's Hospital College, London," did you mean to put there— *A*—I did not write that catalogue, Mr Scofield, and I am not responsible for it

Q—Did you furnish your own qualifications?

Mr Walker—That is objected to as immaterial

The Court *Q*—You knew that was in the book? *A*—Yes, I knew it was in the book, but I could not help it being in the book

The Court—You did not disclaim it?

Mr T J Scofield *Q*—How did you find out it was there, doctor?

Mr Walker—That is objected to as immaterial

Mr T J Scofield *Q*—Did you ever see it there?

Mr Walker—That is objected to

The Court *Q*—Did you give the editor of the book the information on which that statement was made? *A*—I gave the man who got out that book the same information that I am now giving in court on the subject, and he put it in

Q—Did it take me as long to get it as it did him? *A*—No

Mr T J Scofield *Q*—Is it also the same way in the subsequent catalogue of that school? *A*—I do not know, probably it is

Q—Now, doctor, what did you say about your graduation in medicine, your first and original graduation? *A*—I said that I attended St Bartholomew's and St Mary's and obtained a license from the Royal College of Physicians

Q—When you say that, you mean that you are a licentiate of that college? *A*—Yes, sir

Q—Have you a certificate showing that fact? *A*—No, sir

Q—Doctor, I hand you here the Medical Register of the Licentiates of that institution, edition of 1916, and ask you to point out your name in that book as a licentiate of that institution

Mr Walker—That is objected to We do not know anything about what the book is, it is not authenticated, and we know nothing about it

The Court—Objection sustained

To which ruling of the Court the defendants, etc, excepted

Mr T J Scofield *Q*—What is that book that you hold in your hand?

Mr Walker—That is objected to So far as it goes, it shows for itself

A—I don't know

Mr Walker—If it is competent to show anything

Mr T J Scofield *Q*—Do you know what the Medical Register is? *A*—Yes, I know what it is

Q—What is the Medical Register?

Mr Walker—That is objected to

The Court—He may answer if he knows

To which ruling of the Court the plaintiff, etc, excepted

A—It is a list of physicians who are registered and practicing in the place

Mr Walker—Louder

A—It is a list of men, graduates who are registered and practicing in the place

The Court—What does that registration consist of? After you once are licensed, do you have to register before you get into the list? *A*—You need not It is not necessary that one should be registered at all For my part I left England immediately after I graduated, and therefore it is quite likely that my name is not in any register there

Mr T J Scofield *Q*—You don't contend that you are classed here in this register as a licentiate? *A*—No, sir

Mr Walker—That is objected to

The Court—The witness takes different methods He pauses for me to rule as to some questions, and he answers in spite of the objection, as to others

Mr Walker—I did not hear that there was an answer to this last question

The Court—Yes, there was an answer

Mr Walker—Well, let it stay there then, I did not know it was in

Mr T J Scofield *Q*—Doctor, I will ask you whether or not it is not true—if you know whether or not it is true that the book that I have just shown you, or the Medical Register, is published under an Act of Parliament?

Mr Walker—That is objected to

The Court—Sustained, what difference does it make, what the witness knows about it

Mr T J Scofield—Well, if he knows, and that is true, I do not understand why it would not be competent

The Court—What difference does it make whether he knows it is true or not, that is my proposition

Mr T J Scofield—I don't see why it would not be competent, if it is competent for any purpose

The Court—It is competent in spite of what the witness knows, if it is competent for any purpose What did your license consist of? Did you get any writing or any diploma?

A—Yes, sir

Q—What was the nature of it? *A*—I had a certificate

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2 The letter handed the witness was from the secretary of 'St Mary's Hospital Medical School (University of London)," and read "*Dear Sir*—In reply to your letter of the 19th inst I beg to inform you that the name of Thomas G Atkinson does not appear upon the roll of Lecturers on Physiology who have held office at this school'

Q—What? *A*—Yes sir, I got a certificate from them which I lost and never replaced

Mr T J Scofield *Q*—I dont know whether I understood you doctor Did you say you had a certificate? *A*—No, I did not say —

The Court —Which he lost

Mr Walker—And which he never replaced

Mr T J Scofield *Q*—And it was never replaced? *A*—No, sir

Q—So that you have no evidence of the fact that you are a licentiate of that institution? *A*—I have none about me no

Q—I will hand you a letter doctor, which I will first have the reporter mark Defendants' Exhibit B of this date, and ask you to read it. [See Footnote 3]

Mr Walker —I object to it

The Court —Objection overruled Not out loud, though, read it to yourself

To which ruling of the Court the plaintiff etc., excepted

A—I have read it

Mr T J Scofield *Q*—Did you read the signature on the back? Look at it *A*—Yes, sir

Q—Do you recognize that signature? *A*—No sir

The Court —What is the answer? *A*—No sir

Mr T J Scofield *Q*—Now doctor, having read this letter which I submitted to you, do the contents of this letter refresh your recollection in any way as to whether or not you are a licentiate of this institution?

Mr Walker —That is objected to

The Court —He may answer

To which ruling of the Court the plaintiff, etc, excepted

A—No, sir

Mr T J Scofield *Q*—It does not? *A*—No sir

Q—Are you a licentiate of that college? *A*—Yes, sir

Q—For what year? *A*—92

Q—1892? *A*—Yes, sir

Q—You came then pretty nearly, or very soon after that to Republic Ohio? *A*—Yes sir almost immediately

Q—You never practiced any in London? *A*—No sir

Q—How long was it after you became a licentiate, as you say, that you left England? *A*—I left England the same year, in 1892 I left Europe about a year after

Q—What year were you born, Doctor? *A*—1870

Q—Did you ever graduate at any other institution in London? *A*—Only as I stated. I matriculated, and took what is known as the Intermediate Bachelor of Science at London University There are two Bachelors of Science given at London, intermediate and final

Q—What year did you study there? *A*—You dont study at the London University London University is simply an examining body or was in those days

Q—When was it that you took this degree of Bachelor of Science? *A*—I think in 1886 or 87

Q—Have you the certificate? *A*—No, I have not got that any more

Q—What became of that, did you lose that too? *A*—It may be at home if I look it up, I dont know

Q—What did you do, did you matriculate merely? *A*—No I took the intermediate examination

Q—What? *A*—No, I took the intermediate examination

Q—So you did not attend at all? *A*—No

Q—You just simply took the examination? *A*—No, I did not attend at all

Q—You made application didn't you, for the examination to take the degree of Bachelor of Science? *A*—I presume I did, I dont remember any more what the detail of the routine is

Q—When was that, in 1888 or when? *A*—No it was before that, about 1887

Q—Now doctor, coming down to the year 1904 and 1905, you say you continued to be the editor of the *Standard* journal until that time? *A*—Until 1912

Q—What else were you doing besides acting as editor of that journal? *A*—Teaching and practicing medicine

Q—Well where did you practice medicine? *A*—Well now, let me think My recollection is that I had my office in the same place where I had the journal where I edited my journal.

Q—Where was that Doctor? *A*—On Dearborn Street in those days in the Ellsworth Building

Q—Did you have an office anywhere else? *A*—I don't think so

Q—How long did your office continue there? *A*—Up until the time I went to St Louis I went to St Louis in 1910

Q—Did you still continue to do editing of this journal here? *A*—Yes, sir

Q—For two years? *A*—Yes sir

Q—Did you come to its editorial office every day here in Chicago? *A*—Yes sir

Q—What hours did you keep there, all day long? *A*—Practically, yes

Q—Clear up to the year 1910? *A*—Yes sir

Q—Except such time as you say you were teaching? *A*—Yes sir

Q—When you went to St Louis, what did you do? *A*—Edited the *Medical Brief*, taught in school, and took care of a great deal of clinical work

Q—You were not in the practice of medicine, were you? *A*—Why not for the first two years—no, I don't think I ever was in St Louis not in private practice, no

Q—That is what I mean, in St Louis? *A*—No, sir

Q—What school were you in there? *A*—The American Medical College

Q—What did you teach there? *A*—I taught neurology and physiology

Q—What is neurology? *A*—Diseases of the nervous system

Q—Did you attend any clinics there? *A*—Oh, yes.

Q—What kind of diseases? *A*—Diseases—nervous diseases

Q—Nervous diseases? *A*—Yes sir

Q—Nervous and mental? *A*—Yes

Q—Did you attend any other class of clinics? *A*—No

Q—That was the character of clinics that you attended? *A*—Yes sir

Mr Walker —You are speaking of St Louis now?

Mr T J Scofield —What?

Mr Walker —That is at St Louis?

Mr T J Scofield —At St Louis, yes

Q—Did you make a specialty of neurology? *A*—I did in the clinics yes

Q—How long did you continue to specialize in mental and nervous troubles? *A*—Until I came back from St Louis in 1912

Q—When was that? *A*—1912

Q—When you came back from St Louis, what did you do? *A*—Then I began to limit myself to the eye

Q—Then you commenced to— *A*—Then I began to confine myself to the eye

Q—What experience had you had in the study of the eye, any special work? *A*—Yes, one gets a great deal of special study in the eye during his study of nervous diseases, that is what led me into it

Q—So that you then became an eye specialist, did you? *A*—Oh I confine myself to the eye.

Q—You confine yourself to that? *A*—Yes sir

Q—That was commencing in 1913? *A*—About 1912

Q—You have confined yourself to that specialty since, have you? *A*—Yes sir

Q—For the last four years? *A*—Yes, sir

Q—Three years ago you dropped out entirely of the general practice of medicine? *A*—Yes, sir

Q—That was in 1913? *A*—Yes, sir

Q—So that after you came back from St Louis in 1912, you commenced to give attention to the eye and in 1913, you quit making any pretense to practice medicine and confined yourself to the eye? *A*—That is right

Q—Now doctor you have mentioned, I suppose, the different institutions that you have been connected with, have you? *A*—I mentioned the medical institutions I have been connected with, yes

Q—Were you connected with any other institutions? Before we pass away from that you have detailed your experience as a practitioner of medicine now, have you? *A*—Yes

Q—In neurology and all that? *A*—I believe I have yes

Q—All right Now, what other institutions have you been connected with for the last two or three years? *A*—What kind of institutions do you mean?

Q—Well I mean along the line of your work any kind You say you have been studying nervous conditions, and paid attention especially to the eye *A*—I am now connected with the School of Refraction

Q—By School of Refraction what do you mean? *A*—I mean that I teach the fitting of glasses, the refraction of the eye and the fitting of glasses

Q—In other words, you are teaching the young or students how to fit spectacles and glasses? *A*—Fit glasses yes sir

Q—Well Dr Von Zelinski is one of the professors in that institution isnt he? *A*—Yes

Q—Is Dr Funck connected with it in any way? *A*—No sir

Q—Now, you teach students how to fit eye glasses by mail correspondence, dont you? *A*—Oh no

Q—Not at all? *A*—No, sir

Q—You have no correspondence work at all? *A*—Yes I have correspondence work which teaches the theoretical—

The Court —You do your teaching perhaps by mail but you dont teach them to fit glasses by mail they don't fit glasses by mail Your question was ambiguous

The Witness —That is not exactly true either, your Honor

Mr T J Scofield *Q*—What is the fact then, doctor? *A*—The fact is that I teach that part of refraction, which can be taught by mail by mail

Q—What part is that doctor? *A*—Oh, the physics and mathematics can be taught by mail

Q—That is about all there is to the fitting of glasses the question of refraction and mathematics? *A*—That is all there is to theoretical optometry and that is what I teach by mail

Q—So that that part of it the figuring out the lenses, and the condition of the eye, and what is needed to correct it you teach by mail? *A*—I teach the mathematics and physics of it by mail I may say however in passing that it has been shown me by practical experience that it is not practicable and we have abandoned that altogether

Q—So that you have finally come to the conclusion that the statement you made a while ago that such things could be taught by mail

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[3] The letter handed the witness was from the secretary of the Medical Defence Union of London and read in part *Dear Sir* —I have been making further enquiries re Atkinson and find that Thomas George Atkinson is not and never has been L.R C P Lond and further, that an exhaustive search has been made by the Authorities at St Mary s Hospital Medical School and no trace can be discovered of this person ever having been either Teacher or Student.'

was an error? *A*—No, it is other practical obstacles that have come in my way, not that I still think that it can be taught by mail, so far as possibly the teaching of it is concerned

Q—When did you abandon that way of teaching? *A*—Well, a month or so ago, I should say, three or four weeks ago

Q—Since this suit has been started? *A*—Quite a long while after it, yes

Q—You were still teaching it as late as January, 1916, by mail, were you not? *A*—Oh, yes, we were teaching that part of it by mail, yes, sir

Q—You are still teaching it are you not, by mail, to some extent? *A*—I do not think we have got a single student Of course we had to arrange for the shutting off of those that were already on a correspondence course, but I do not think there is one student left on that There may be, but I do not think so

Q—Doctor, you are the same Dr Atkinson, are you not, who was employed by Mr Fletcher Dobyns of this city in the defense of the Jiroch Medical Company case, which was on trial before Judge Landis here a few weeks or months ago? *A*—I was retained by him, but I cannot say that I was ever employed by him

Q—You were retained by him? *A*—Yes, sir, I was retained by him

Q—And you consulted with him, didn't you? *A*—I think I did, yes

Q—You were paid money by him, were you not? *A*—Yes When I said I was not employed, I meant that we never went into court, because the case never reached court

Q—That is, it never reached your part of it? *A*—Yes, that is what I mean, exactly

Q—But you were employed in the Jiroch Medical Case before Judge Landis? *A*—Oh, yes

Q—And you received pay for it? *A*—Yes

Q—Now, just a few questions which I wish to ask you Did you ever treat a case of gonorrhea? *A*—Oh, yes

Q—How many cases did you treat, do you think? *A*—Oh, not very many, of course, but what falls to the ordinary lot of the practitioner

Q—Now, then, in the treatment of gonorrhea, did you advise your patients to abstain from the use of alcohol? *A*—As a beverage, yes

Q—Did you advise them to cut out wine and beer, and spirituous liquors generally? *A*—Yes, sir

Q—Why did you give them that advice, doctor? *A*—Because, in large quantities, I do not think that alcohol is a good thing for a gonorrheal patient

Q—Doctor, do you believe that there are medicines, which, if applied locally, will destroy the gonococcus? *A*—That is a question I do not feel competent to express an opinion about, but I will say that I believe there are drugs, which, applied locally, at least render them harmless, inhibit them

Q—Well, you have used that sort of medicine in the treatment of gonorrhea, haven't you? *A*—Oh, yes

Q—Do you think that gonorrhea, in a healthy individual, is a self limiting disease?

Mr Walker—I am going to make this objection I did not ask this witness anything about gonorrhea at any time If this is to test his knowledge, that is another thing But I did not ask this witness a single thing about gonorrhea

The Court—It is not cross-examination

Mr T J Scofield—Oh, yes, your Honor

Mr Walker—I did not ask him one thing, your Honor, about that

The Court—As a matter of fact it is not

Mr T J Scofield—What say?

The Court—I say, it is not cross-examination You are asking this witness to contradict what some other witness has said

Mr T J Scofield—Oh, no, in his examination, he called attention—he asked the doctor about vaginitis

Mr Walker—Yes, but I did not ask anything about gonorrhea

Mr T J Scofield—And the various causes for it, and one of the common causes—

The Court—I think the word "gonorrheal" was not mentioned

Mr Walker—I never asked him anything about it at all

Mr T J Scofield—I do not think it was either, but the subject which he introduced had relation to the subject which was discussed in the Home Treatment Book for Women, and the advice which was given in the treatment of gonorrheal vaginitis

Mr Walker—Not at all I did not ask him anything about gonorrheal vaginitis

The Court—No

To which ruling of the Court the defendants, etc , excepted

Mr T J Scofield *Q*—Is vaginitis ever caused by gonorrhea, doctor? *A*—Yes, sir

Q—Well, is that form of vaginitis, or of gonorrhea, is it one which is self limiting, if a person is otherwise healthy?

Mr Walker—That is objected to

The Court—He may answer

To which ruling of the Court the plaintiff, etc , excepted

A—I think that that is pretty hard to answer In the main, of course, gonorrhea, in my opinion, is a self limited disease, but—

Mr T J Scofield *Q*—What do you mean by that?

Mr Walker—Let him finish, he has not finished

Mr T J Scofield—All right

The Witness—I mean that if it is let alone, the gonococcal part of it any way will disappear

Q—Well, now, you say in the main What do you mean by that, you mean that is sometimes true, and sometimes not? *A*—That is just exactly what I was going to explain I say, in the main, it is self limited, but there may be forms of gonorrhea, which by anatomical and pathological reasons tend to perpetuate themselves and become very chronic

Q—And extend upward, do they not, also? *A*—Yes, sir

Q—Sometimes, I suppose, it gets around in the ureter and in the bladder, and then sometimes up through the womb and into the fallopian tubes and ovaries? *A*—Yes, sir

Mr Walker—This is objected to What is this? A test of his medical knowledge or what I did not ask him anything about those subjects

The Court—He has a right to test his medical knowledge He is an expert here, and was put on for that purpose

Mr Walker—I did not put him on as an expert on gonorrhea, and I did not ask about it

To which ruling of the Court the plaintiff, etc , excepted

Mr T J Scofield *Q*—Now, doctor, inflammations of the vagina, and of the fallopian tubes, and of the uterus, and of the ovaries are sometimes gonorrheal, are they not? *A*—Inflammation of those parts?

Q—Yes? *A*—Yes, sir

Q—Comes from gonorrhea, doesn't it? *A*—Yes, sir

Q—Now, in your opinion, which you expressed this morning that this medicine, which Mr Walker called your attention to specifically as Wine of Cardui—did you mean to be understood that in your opinion that sort of medicine would be good for a woman who was suffering from gonorrheal salpingitis? *A*—No, I did not say so

Q—You did not mean that then? *A*—No, sir

Q—Nor you did not mean, I suppose, that it would be good for gonorrheal inflammation of the womb, either? *A*—No, sir

Q—Nor endometritis, or metritis, gonorrheal? *A*—Oh, I don't know, I think perhaps it would be good for those

Q—You think that it may be good, do you? *A*—Yes, sir

Q—For endometritis or metritis? *A*—Yes

A—But not for salpingitis, or ovaritis or anything of that sort? *A*—Not a gonorrheal salpingitis, no sir

Q—Now, doctor, vaginitis or gonorrheal vaginitis, would you think such a medicine as that would cure gonorrheal vaginitis? *A*—I don't think any medicine cures it

Q—Now, doctor, taking up the question of viburnum prunifolium, you said something about that this morning What are the potent qualities that viburnum prunifolium contains? *A*—I cannot tell you

Q—You don't know what they are? *A*—No

Q—What are the potent qualities found in cnicus benedictus that gives it its medicinal value, if it has any? *A*—I cannot tell that Both in viburnum and in carduus, I can tell one or two things that have been suggested as being—

Q—I am not asking that I am asking if you know *A*—No, I do not

Q—What the potent element is in either? *A*—I do not

Q—In either of these herbs, if they contain potent elements? *A*—Frankly, I don't know

Q—You never used any cnicus, did you? *A*—No, sir

Q—In your life? *A*—No, sir

Q—Now, doctor, in the hypothetical medicine described to you by Mr Walker, which contained both viburnum prunifolium, and carduus benedictus, did you, in considering and in answering his question, consider both carduus benedictus and viburnum prunifolium as being of value in that medicine in the dosage mentioned? *A*—Yes, sir

Q—Do you think now, that on account of the synergistic action of those two drugs, that this combination would have a greater effect than it would have if either of them were omitted? *A*—Yes, I do

Q—Do you think that the solution, described by Mr Walker and which he said was in a 20 per cent alcoholic menstruum, or solution would be just as valuable if the viburnum prunifolium was omitted? *A*—No, I don't think it would

Q—Do you think that that solution would be just as valuable in the same percentage of alcohol if the carduus was omitted? *A*—No, I don't think it would

Q—You do not then, if I understand you right, think that that medicine if it was effective at all, would be as effective if the viburnum prunifolium was left out? *A*—No, sir

Q—And you don't think that that medicine would be as effective, if effective at all, if the carduus benedictus was left out and the viburnum prunifolium was left in? *A*—No, sir

Q—In your judgment, in order to be effective, if effective, it takes the combination of the two?

Mr Hough—We object to that That is not what the witness says

Mr T J Scofield—Is that right, Doctor?

The Court—That is in the form of a question

The Witness—I can answer

The Court—He may answer

To which ruling of the Court the plaintiff, etc., excepted

The Witness—No I did not mean that at all, but I think that the two together are more effective than either would be by itself I don t mean if they were separate then they would not be effective at all but they would not be as effective if one was taken out and the other left, as they are both together

Mr T J Scofield Q—Now, you said that you had used the fluidextract of viburnum? A—Yes, sir

Q—That is the form you use it in your practice— A—Mostly, yes sir

Q—Where you use it at all, is that right? A—Yes sir that is right.

Q—What is the official dose of that, Doctor? A—I believe it is somewhere from 30 to 60 drops.

Q—Yes. That represents practically the same number of grains, does it? A—The extractives of those grains, yes

Q—Yes? A—The medicinal effect of those grains, yes

Q—Yes Well, now Doctor assume that it is a fact that many women had used this solution, Wine of Cardui both before and after viburnum was added, and had reported the same effects would this change your mind in any way on the subject of the omission of either of these herbs from that solution?

Mr Walker—Objected to

The Court—Have we had any evidence along those lines? I don't recall

Mr T J Scofield—Oh, yes

Mr Loesch—Plenty of it

Mr Walker—Where?

Mr T J Scofield—Running all through these depositions

The Court—Go ahead

To which ruling of the Court the plaintiff, etc., excepted

The Witness—Will you read the question again, so I can get the sense of it?

Mr T J Scofield—I say, assume it is a fact—well, let the reporter read it let the reporter read it

(Question read as follows "Q—Well now, Doctor, assume that it is a fact that many women had used this solution Wine of Cardui both before and after viburnum was added and had reported the same effects would this change your mind in any way on the subject of the omission of either of these herbs from that solution)

The Witness—No, I don t think it would

June 7, 1916, Morning

The Court met pursuant to adjournment Attorneys for the plaintiff—The Chattanooga Medicine Co—offered in evidence a letter sent by the secretaries of various state medical societies to their members, enclosing a copy of a letter from Dr Heizer, and requesting information regarding the use of Wine of Cardui There was next offered in evidence an advertisement which appeared in The Journal of the American Medical Association for Nov 20, 1915, the advertisement being that of a medical firm which manufactures a preparation of carduus benedictus The advertisement states that this firm will not "supply any but products of the highest standard and unquestioned therapeutic virtue"

There was then offered in evidence the deposition of Mrs Lydia Powell, mentioned in the article published in The Journal of the American Medical Association for April 11

There was then offered in evidence a Query and Minor Note published in The Journal of the American Medical Association, May 27 1911, referring to the limitations of tablet dealers to the effect that it is not sensible to put volatile substances in pills and tablets and expect the full amount to remain

TESTIMONY OF DR CHARLES E CASPARI

Dr Charles E Caspari was called as a witness for the plaintiff in rebuttal

DIRECT EXAMINATION BY MR HOUGH

Dr Caspari testified that he is a chemist, residing in St Louis He received the degree of Bachelor of Arts in the Johns Hopkins University, in 1896, and the degree of Doctor of Philosophy and Chemistry in 1900, at the same university He taught in 1900 in the Columbia University for one year He then went to St Louis as research chemist in organic chemistry for the Mallinckrodt Chemical Co for two years He then became professor of chemistry in the St Louis College of Pharmacy, which position he has held ever since For the past twelve years he has been chemist for the Marlborough Drug Co., St. Louis, and for the J S Merrill Drug Co, St Louis, and has done considerable work in food and drug analysis

Q—Are you a member of any societies chemical or medical? A—Yes, I am a member of the American Chemical Society, one of the co editors of one of the journals of the society, the *Journal of Engineering and Industrial Chemistry* I am a member of the American Pharmaceutical Association I am a Fellow of the American Association for the Advancement of Science I am a member of the St Louis Academy of Science, a member of the Revision Committee of the Pharmacopeia, and in that connection, I am a member of four subcommittees of the Revision Committee namely, those on organic chemicals, inorganic chemicals, drug assays, and essential oils

Q—Of which Revision Committee? A—The Revision Committee of the Pharmacopeia, which is at present pending, and which will appear in a few months

Q—How long has the work of that Revision Committee been going on? A—It has been going on since May, 1910

Q—What Pharmacopeia is that? A—That is the United States Pharmacopeia the 9th revision

Q—What is a Pharmacopeia, doctor? A—A Pharmacopeia is a collection—or consists of descriptions of classes of drugs and chemicals and medicinal preparations, which are made from those, together with their properties their physical and chemical properties methods of determining their strength and methods for standardizing them

Q—What is the National Formulary? A—The National Formulary is somewhat similar in its character to the Pharmacopeia It is a book which is owned and published by the American Pharmaceutical Association and also contains drugs and chemicals which are used perhaps not so extensively as those embraced in the pharmacopeia, but which are nevertheless, in use and deserving of standardization

Q—What is a dispensatory, and what relation does it bear to the Pharmacopeia, and the National Formulary? A—A dispensatory is a commentary on the Pharmacopeia in that it comments on all the drugs and chemicals that are official in the Pharmacopeia, and in the National Formulary as well, but it even goes further and includes a number of drugs and chemicals which are not contained in the Pharmacopeia but which are nevertheless of sufficient value to be used The dispensatory further indicates the therapeutic action and uses of drugs and chemicals which are not contained in the Pharmacopeia or National Formulary

Q—When you say or sufficient value to be used," what do you mean? A—I mean to be used by the medical profession in this country

Q—You mean of therapeutic value? A—Of therapeutic value, of course

Dr Caspari stated that the doses in the Pharmacopeia are average doses He defined fluidextracts and tinctures, stating that the solvent or menstruum is alcohol, in a greater or less dilution He stated that the hypothetical medicine described by Mr Scofield would correspond to a tincture He stated that the chemist's report of Wine of Cardui published in The Journal for April 11, 1914, is not a chemical analysis because it is not sufficiently complete He would call it, as it is properly called, a chemist's report He stated there are other classes of active drug principles other than those stated in the report. He said that none of the chemist's reports given by the witness for the defendant gave the percentage of the ingredients to total 100 He also stated that chemistry does not indicate the therapeutic value of any drug

The witness analyzed several samples of Wine of Cardui and found from three and three tenths to three and one half per cent of extractive matter He was asked two questions comparing the material contained in Wine of Cardui with other drugs in the Pharmacopeia Objections to both questions were made and sustained

Dr Caspari stated that he found 19½ to 20 per cent of alcohol by volume in Wine of Cardui He analyzed ten different samples of carduus benedictus The maximum alcohol was 44 2 per cent by volume, and the minimum was 29 6 by volume The maximum extractive was 24 06 per cent, and the minimum extractive was 7 43 per cent He stated that had they been transferred into tinctures they would all contain more alcohol than Wine of Cardui The extractive matter would be about the same or less than is contained in Wine of Cardui The witness was asked if one of those samples was made by the aforementioned pharmaceutical firm Objection was made and sustained against any answer

The witness stated that it has been attempted to use glycerin as a preservative and as an extractive menstruum, but unsuccessfully

Mr Hough Q—What are the objections from a pharmaceutical point of view? A—Glycerin extracts too much inert material together with the valuable material from the drug inert material, such as starch and gums and dextrin and upon standing these liquid preparations will gradually begin to deposit this inert material and continue to deposit it for a long time, so that a very turbid and muggy looking extract results and while it is true that glycerin itself can be used for preservative purposes, it cannot successfully be used as an extractive solvent There are a few cases where glycerin, together with alcohol, is used as an extracting solvent

THE COURT Q —Could you use—this may illustrate the ignorance of the Court—but could you extract the active principles by some other menstruum, and then preserve them after extracting them, in glycerin? *A* —That has also been tried in the case of acetic acid, but has been found to be unsatisfactory

Mr Hough Q —Doctor, if you know, state what objections there would be to a preparation of the extractive matter in Wine of Cardui, in the form of pills and tablets? *A* —There are several objections to the use of the extractive matter from Wine of Cardui for making pills and tablets

In the first place, in order to obtain the extractive matter, it must be extracted from the drug with a liquid solvent and this solvent then has to be evaporated off in order to obtain the solid residue which is then incorporated into the pills or tablets

Now, the evaporation of the solvent produces a serious change in the material extracted from the drug, whether that evaporation be carried on at a high temperature (such as the temperature of boiling water or whether it be carried on at lower temperature, the solid residue, standing, undergoes deterioration

Furthermore, the solid material from the evaporation of Wine of Cardui is very hydroscopic, which means that it takes up moisture very rapidly from the air, absorbs it and remains soft and soggy and that militates against the use of these substances in the form of pills and tablets

Mr Hough —(Addressing counsel for defendants) Will you let me have your samples, please, that you introduced in evidence of pills and tablets?

Q —May heat affect the substance contained in Wine of Cardui? *A* —Heat positively does affect those substances, because Wine of Cardui ordinarily has a distinctive bitter taste, whereas if it is heated for any length of time at all, this bitter taste almost disappears entirely, showing that the heating has produced some change, some decomposition change in the substance, destroying that particular individual substance, which is responsible for the bitter taste

Q —Wine of Cardui, if evaporated to dryness, is the residue soluble in water? *A* —The residue is not completely soluble in water, no

Q —Is everything that is in Wine of Cardui soluble in 20 per cent alcohol? *A* —It is

The witness examined the exhibits introduced by the defendant, seven of which he stated illustrated the criticisms he made against the use of the solid material from Wine of Cardui in pill and tablet form He was shown two samples containing glycerin He stated that there was no odor to the samples and that none of them smelled like Wine of Cardui It was impossible for him to tell whether they smelled like carduus benedictus or viburnum prunifolium because these drugs have no odor The extractives have no odor because the volatile matter is evaporated off

The witness has found sixty preparations in the U S Dispensatory and the National Formulary which contain more alcohol per dose than Wine of Cardui, based on the maximum dosage given in these books He could not recall how frequently these doses were given

Dr Caspari stated that there are many vegetable compounds which cannot be analyzed to determine the preparations from which they are made He stated that he could not ascertain the ingredients from which Wine of Cardui was made The results of his analysis were practically the same as those obtained by all the chemists who have testified in the case In his opinion no chemist could ascertain by chemical analysis what the ingredients of Wine of Cardui are

Dr Caspari testified that if a guinea-pig should get 45 drops or the equivalent of 45 drops of Wine of Cardui, the guinea-pig weighing 154 grams, the corresponding dose of Wine of Cardui for a woman weighing 150 pounds would be about two bottles

An adjournment was taken until 2 o'clock the same day, Wednesday, June 7

June 7, 1916, Afternoon

TESTIMONY OF DR CHARLES E CASPARI (*continued*)

Court met pursuant to adjournment Dr Charles E Caspari resumed the stand in behalf of the plaintiff

CROSS-EXAMINATION BY MR T J SCOFIELD

The witness stated that when a preparation is brought to him for analysis he first endeavors to get information as to what the preparation is used for and also as to the possible ingredients

At this point Mr Hough introduced a correction on the last question asked the witness on direct testimony—namely, addition of the words "without alcohol" in each case as to dosage

Dr Caspari stated that any knowledge of the physical properties—the color, odor, and taste of any preparation submitted for examination would be of aid in making such examination He stated in reference to Wine of Cardui that the word "wine" would suggest that there was alcohol present and the word "cardui" might suggest carduus benedictus He bought five bottles of Wine of Cardui in the open market He stated that most chemists are familiar, in a general way, with the therapeutic action of drugs

The witness again stated his distinction between a chemical analysis and a chemist's report He stated that there was no fault to find with the results of the chemist's reports published in THE JOURNAL because he found practically the same results himself

Dr Caspari stated that magnesium carbonate is added to pills or tablets to make them cohere better He was asked concerning his criticism of pills offered as defendant exhibits to the effect that they were in a mass and whether or not they would have remained separate if they had been covered with gelatin or with tolu He stated that the preparation which he examined was not so covered

The witness stated that there are very few physicians prescribing extemporaneous pills nowadays Pills prescribed are made by pharmaceutical houses and they are coated The coating protects the condition of the pill He stated that the odor of viburnum prunifolium was probably due to some substance in the nature of a glucosid He stated that he did not know whether the addition of alcohol to the glycerin preparations would produce the odor of the glucosid The difference in odor between the glycerin extracts and Wine of Cardui is a difference in kind, while the difference in odor between Wine of Cardui and the fluidextract of viburnum prunifolium is rather a difference in degree He stated that if sufficient alcohol were added it might produce the volatile like odor of the glucosid There are three or four tinctures and two or three fluidextracts in the Pharmacopeia which contain glycerin

Dr Caspari's experience has been that water alone will dissolve very little from viburnum prunifolium Twenty per cent alcohol will extract some of the material, 61 per cent is probably used in the fluid extract to extract all of the material He has not the faintest idea whether hot water takes out all of the virtues of viburnum prunifolium

REDIRECT EXAMINATION BY MR HOUGH

The witness testified that it was impossible for him to state whether the ingredients in the pills or capsules are the same as they were when they were made, or not It would require a more careful examination than merely looking at them He stated that the coating of pills would not primarily keep in the volatile matter, but it would depend largely on the character and nature of the volatile matter He found volatile substances in Wine of Cardui

The witness stated that glycerin is an alcohol It is used in certain preparations because that particular combination of glycerin and alcohol has been found the best by experience to extract and preserve that particular drug

A STATEMENT BY THE COURT

The Court then made the following statement without the presence of the jury

THE COURT —It has been represented to the Court that rumors have been spread, by whom it is at this time unimportant, to the effect that various doctors who have testified in this case volunteered in open court the names of their patients Such rumors are false All of the doctors, save one from Chicago, who had permission from his patient to disclose her name, requested the Court to allow them to withhold the names of their patients This request was granted upon condition that the names be given to opposing counsel As a result, none of the names were mentioned in open court or given to the public, but were given privately to opposing counsel for verification and investigation

The foregoing statement may be made a part of the record in this case

An adjournment was taken until Thursday, June 8, 1912, at 10 30 o'clock a m

(To be continued)

Correspondence

Federal Aid for Indigent Consumptives

To the Editor —After twenty-five years of struggle against the menace of the migratory consumptive, California offers a solution in the Kent bill It is a problem that calls imperatively for solution not only in California, and in the southern and southwestern states and in Colorado, but it constitutes from 5 to 15 per cent of the tuberculosis situation in the middle states, and in New York and Massachusetts Every eastern manufacturer suffers immense economic loss from the shifting character of labor, even where the shifting is among the inefficient, and the inefficiency is traced to tuberculosis more than to any other single cause It is estimated that 10,000 consumptives wander into California every year, filtering through Colorado, Texas, New Mexico and Arizona Thirty per cent are indigent when they arrive, 20 per cent more become so within a year, between 10 and 28 per cent die within thirty days of arrival, and from 20 to 30 per cent more within the year, while the percentage who recover or return home is negligible

Unjust as this burden is, California alone would scarcely have had the temerity to ask for federal help if it had not first exhausted all available efforts at home and been forced to realize that the task was too big and too complicated for a state to handle unaided The state embargo against the consumptive has been tried and found unworkable When not unconstitutional, it is truly brutal Placing the home responsibility on the home state and collecting costs from the home state is not feasible, as the constitution forbids agreements between states (see federal constitution, Article 1 Section 10 and Subdivision 10) Returning indigent patients who so desire is enormously expensive, and if they do not so desire there is no legal way of forcing them Moreover, this is not necessarily a solution of the case so returned Local agencies are frequently unable to meet the problem, and the "passing on" method has steadily grown in spite of the efforts of organized charity to prevent it This has resulted in shifting the load to localities where they are trying to do their duty by their own tuberculosis sufferers Los Angeles in six months (January 1 to June 30 1915), had 668 consumptives in her hospital, of whom 145 had been in the county less than six months, while 290 more were adults who had been in the state less than five years

From the injustice of this burden there is no relief save to bring proper influences to bear on the states and communities whence the patients come and on the transportation companies To those who had studied the problem for years it seemed obvious that these influences could come only from the federal government Hence the Kent bill, introduced into Congress by Hon William Kent of California, and backed by Secretary McAdoo, Surgeon-General Blue and the Public Health Service

The provisions of the Kent bill are that

> Any hospital caring for consumptives *may apply* for 75 cents a day subvention from the federal government for each nonresident consumptive cared for provided
>
> (*a*) That from some source state, municipal or private at least 75 cents a day is being spent on his care
>
> (*b*) that the care so given satisfies requirements of the Public Health Service who are authorized to visit such hospitals periodically
>
> (*c*) that the individual for whom the subvention is sought can show that he is legally a resident of some other state and did not migrate and was not assisted in migration to secure aid under this act
>
> 2 A consumptive not legally resident in the state where he becomes dependent may at his request be returned to his home state by the Public Health Service at government expense, provided
>
> (*a*) that he may be adequately cared for in his home state
>
> (*b*) and finally if returned he is not again entitled to any benefit under this act

It should be noted that by the terms of the bill neither a state municipality nor private institution need apply for the subsidy if it does not want to, thus obviating any criticism regarding federal interference with state rights Furthermore, the form of cooperation suggested is a recognized method of dealing with tuberculosis in a considerable number of states And there is the additional safeguard that the money is administered only on recommendation of the Public Health Service after a hospital has asked for the subsidy and been found to be doing efficient work Therefore, any criticism based on abuse of *charity* subsidies will encounter this essential difference in a *health* subsidy as contemplated by the Kent bill, namely, that *the source of the subsidy also determines* the conditions and standards according to which it may be granted

The resulting standardization of tuberculosis hospitals seeking government aid is one of the big features of the bill Better care of tuberculosis in each state will result from the Public Health Service's jacking up of sanatoriums and the encouraging of new buildings Foci will be reduced and new cases prevented "Cures" and 'patent medicines" for the tuberculous can be regulated And, eventually and inevitably migration will be reduced, because it will put government authority on the fact that climate has never yet cured tuberculosis, and will give wide and effective advertising to this fact

Furthermore under the supervision of the Public Health Service which has undertaken to carry out the provisions of the bill we may expect the enforcement of the interstate quarantine regulations The Public Health Service under the secretary of the treasury already has unlimited police power (U S quarantine act, 1893), but has never exercised it to the extent made possible by the law To bring out this full authority requires some crisis such as the plagues in San Francisco and New Orleans or some intolerable burden necessitating federal aid

This is an interstate problem, and the Public Health Service has the power to deal with tuberculosis as it has also the power to deal with any other quarantinable disease The secretary of the treasury is authorized to make any regulations necessary to carry out such quarantine His willingness to accept the responsibility placed on him by this bill is conclusive evidence of his determination to carry out such measures as are proposed by the Kent bill in every state that applies for help where the migratory consumptive has become a local menace The Kent bill makes the migratory consumptive a national issue and has led the Public Heaith Service to make a detailed study of the United States interstate quarantine act with a view to more stringent regulations

Philip King Brown, M D, San Francisco

Epinephrin in Infantile Paralysis

To the Editor —In the symposium on infantile paralysis which appeared in The Journal, July 22, there is an error in the reproduction of my remarks (p 314) which I wish to correct It reads there "No death (of infantile paralysis) is usually due to respiratory paralysis" It should read, of course 'Death is usually due to respiratory paralysis"

I shall avail myself of this opportunity to state that in the cases of infantile paralysis treated at the New York Throat, Nose and Lung Hospital, more than fifty babies received an intraspinal injection of 2 c c of a 1 1,000 epinephrin chlorid solution every six hours from the very beginning of the disease that is as soon as the patients were brought to the hospital One result stands out clearly that all these little patients stood *two cubic centimeters* of epinephrin solution administered intraspinally every six hours for many days without the slightest harm As to the beneficial results, I prefer for the present, to make no comment whatsoever

S J Meltzer, M D, New York

Meeting of Cremation Society

To the Editor —The fourth annual convention of the Cremation Association of America will be held in the auditorium of the Hotel Gibson, Cincinnati, Thursday and Friday, August 24 and 25 Physicians who are interested in cremation are invited to attend They are also eligible to associate membership

Some of the most eminent members of our profession have been connected with the sanitary reform known as the cremation movement In Germany it was advocated by

Rudolph Virchow, in England by Sir Henry Thompson and Sir T Spencer Wells, in France by Dr Prosper Pietra-Santa, in Denmark by Dr F Levison, and in Italy by Drs Gaetano Pini and M de Cristoforis In our own country, Dr Francis Julius Le Moyne, a graduate of the medical department of the University of Pennsylvania, built the first crematorium *in America at his own expense, and cremation* was ardently promoted by Drs Samuel D Gross, Edward J Bermingham and Felix Formento

It will be news to many that the United States has forged ahead of Germany in the leadership of the cremation movement There are fifty-three crematories here as compared to forty-eight in Germany, and two more are in contemplation, one at Salem, Mass, and another at Kansas City We have also outdistanced Germany in the total number of incinerations, the figures being 86,006, up to the end of 1913, as compared to 76,350, up to the end of 1915 Statistics recently published in the *Sunnyside* show there was an increase of 906 per cent in the number of cremations in America in fifteen years

Hugo Erichsen, M D, Detroit,
President, Cremation Association of America

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

POTASSIUM PERMANGANATE IN RATTLESNAKE BITES

To the Editor —I was recently asked as to the value of potassium permanganate in rattlesnake bites 1 What is your opinion? 2 What local measures would you suggest? 3 Are there any serums of value?

F G Dewey, M D, Coleridge, Neb

Answer —1 Potassium permanganate is a powerful oxidizing agent, and if applied directly to the open wound will destroy the rattlesnake venom with which it comes in direct contact, practically a very small amount It is of no value, however, internally, as a sufficient dose to oxidize the venom would kill the individual See Cushny's "Textbook of Pharmacology and Therapeutics," Lea and Febiger

2 For rattlesnake, moccasin and copperhead poisoning, no successful antivenoms as yet have been produced See Kolmer's "Infections, Immunity and Specific Therapy," W B Saunders Co, Philadelphia

3 The most approved local measures in the treatment of snake bites are free opening of the wound, immediate application of a tourniquet to the limb, and the local use of a saturated solution of potassium permanganate

PRESCRIPTION CONTAINING TARTAR EMETIC AND SODIUM BICARBONATE

To the Editor —The following prescription is published in a recent journal under the name of a "yaws mixture" and is recommended for kala azar

℞ Antimon et Pot Tartr		gr	1
Sod Salicyl		gr	5 10
Pot Iodid		dr	1
Sod Bicarb		gr	15
Aq	ad	oz	5

The foregoing is one dose to be given three times a day for adults Sometimes the potassium iodid has to be reduced to 15 grains

The *main object of the treatment* is supposedly the administration of antimony, and I am wondering in what form the antimony occurs in this mixture, and if as a matter of fact it is soluble or, indeed, absorbable The author states that the mixture is "inelegant owing to the bicarbonate of soda, but this decreases the emetic properties of the mixture" I find that a mixture of a 2 per cent solution of tartar emetic with a 4 per cent solution of sodium bicarbonate produces a white precipitate Perhaps the reason the above described mixture is not emetic is that the antimony is insoluble I should be glad of any light that you can throw on the question

Samuel Cochran, M D, Hope Hospital, Hwaiyuan Anhwei, China

Answer —The foregoing letter was referred to our chemical laboratory, which reports Tartar emetic and sodium bicarbonate mixed in aqueous solution in the proportions given in the prescription form no immediate precipitate, but on standing some time (for example, over night) a sediment appears on the bottom of the flask This deposit or precipitate, when filtered off, washed with water and dissolved in hydrochloric acid, gives with hydrogen sulphid the characteristic orange-colored precipitate of antimony sulphid

In all probability, since there is no immediate precipitation, there is a slight loss of carbon dioxid and resultant increase in hydroxyl ion concentration, permitting hydrolysis of the complex tartrate ion and precipitation of antimony hydroxid

It is quite likely that the relative insolubility of the antimony compound which is precipitated out by the alkali renders the absorption of antimony slower and in this way decreases its emetic properties

FRAUDULENT CANVASSERS

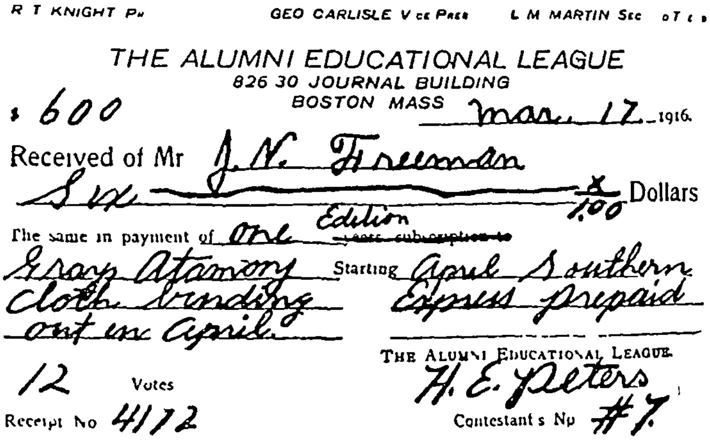
To the Editor —I am enclosing you exhibits which will probably be of interest to you, because they represent, I think, a fraud practiced on members of the medical profession The gentleman who signed the receipt and took my money claimed to represent the Alumni Educational League, but my letter to the league, asking about the book, which I had paid for, is returned by the postal authorities as unclaimed, with the notation on the back of the envelope that the concern is not known at the address given

I would appreciate it very much if you could, in any way, trace this concern out, and so would other members of the profession who doubtless gave orders and cash, as I did myself

The young gentleman claimed to be helping himself to a college education in this way and seemed so familiar with the medical publications, as well as others, that the idea of fraud in connection with it never entered my head

James V Freeman, M D, Jacksonville, Fla

Answer —The Journal has repeatedly called attention to this scheme See editorials, The Journal, April 10, 1915 p 1247, May 29, 1915, p 1855, July 31, 1915, p 434, and Nov, 20, 1915, p 1825 News items have been published Sept 4, 1915, Oct 23, 1915, and an answer in the Queries and Minor Notes Department, Nov 20, 1915, p 1837



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ERLENMEYER'S BROMID MIXTURE

To the Editor —In Current Medical Literature (The Journal, June 12, 1915, p 2028), reference is made to the administration of bromid in Erlenmeyer's Mixture Kindly explain what the mixture is

H J Treshler, M D, Midland, Pa

Answer —The original article to which our correspondent refers, which was abstracted in The Journal, is "The Opium-Bromid Treatment of Epilepsy According to Flechsig," by H G W Kellner

The formula for Erlenmeyer's bromid-water, or mixture, is

		gm or c c	
Ammonium bromid		1	gr xv
Potassium bromid			
Sodium bromid	aa	2	gr xxx
Carbonic acid water (saturated)		600	ʒ xx

According to the original formula of Dr Erlenmeyer, 1 drop of ammonia water is added to the foregoing formula

NINE USEFUL DRUGS

Enough replies have been received to the Query on this subject, The Journal, July 22, 1916, page 309, to indicate that an analysis can be made However, as a greater number will make such an analysis of interest and value, additional suggestions as to the nine useful drugs to be carried in a physician's handbag will be appreciated

Medical Education and State Boards of Registration

New Requirements for Licensure in North Dakota

An official report states that at a meeting of the State Board of Medical Examiners of North Dakota held in July, regulations on four special matters were adopted, as follows

1 The board voted to admit to practice in North Dakota without further examination any physician who presents a certificate from the National Board of Medical Examiners showing that he has successfully passed their examination

2 It was voted that on and after July, 1918, every applicant for license, in addition to graduation from a recognized medical school, must present a certificate showing that he has served one year as an intern in an approved hospital This applies, therefore, to all graduates of 1917 and thereafter

3 Beginning January, 1917, every applicant for a license by reciprocity must present a diploma from a college rated in Class A by the Council on Medical Education of the American Medical Association at the time such diploma was granted The resolution states that this requirement will apply to graduates of 1912 and thereafter

4 Hereafter no candidate who fails at two examinations will be allowed to write a third time unless he presents a certificate showing that he has spent an additional year either in graduate study or in an approved college or hospital

North Dakota is the second state to take definite action regarding certificates from the National Board of Medical Examiners, Maryland having done so by legislative enactment a few months ago

Porto Rico April Report

Dr M Quevedo Baez, secretary of the Board of Medical Examiners of Porto Rico reports the oral and written examination held at San Juan, April 4, 1916 The total number of subjects examined in was 9, total number of questions asked, 90 percentage required to pass 75 The total number of candidates examined was 6, of whom 3 passed and 3 failed The following colleges were represented

College	Year Grad.	Per Cent
PASSED		
Bennett Medical College	(1915)	79 5
Chicago College of Medicine and Surgery	(1915)	76.5
Rush Medical College	(1915)	76 5
FAILED		
Bennett Medical College	(1915)	68 5
Chicago College of Medicine and Surgery	(1915)	56 5
Tufts College Medical School	(1912)	70 3

The applicant was required to answer ten questions in each of the following subjects (questions in pathology are missing)

DIAGNOSIS

1 Differentiate between cerebrospinal meningitis and anterior poliomyelitis 2 Describe the symptoms of brain tumor 3 Give in detail your advice to a young patient in the earliest stage of tuberculosis 4 Give the causes and symptoms of hemothorax 5 Mention the cause and symptoms of disease of the coronary arteries 6 Differentiate cardiac asthma and bronchial asthma 7 Give etiology and symptoms of arteriosclerosis and state what conditions of heart brain and kidney are produced by it 8 Describe the symptoms present in (*a*) carcinoma of the stomach (*b*) gastric ulcer (*c*) duodenal ulcer 9 Give the probable cause and symptoms of calculus of pancreas 10 What are the symptoms of acute Bright s disease? 11 Mention some complications which may follow typhoid fever 12 Give the cause and symptoms of elephantiasis 13 Describe the prodromal symptoms giving the duration of each in (1) scarlet fever (2) measles and (3) smallpox 14 Describe bubonic plague 15 Give the symptoms and diagnosis of hookworm disease

GENERAL ANATOMY

1 Give the origin insertion and action of the rectus femoris 2 Describe the collateral circulation after ligature of the common carotid artery 3 Describe the deep palmar arch and give its formation. 4 Describe the knee joint 5 Describe the arteria femorales as to (*a*) origin (*b*) course and (*c*) branches. 6 Describe the vena cava inferior 7 Give the minute anatomy of the lobules of the liver 8. Give the topographic anatomy of (*a*) the internal abdominal ring and (*b*) the external abdominal ring 9 Name the ligaments of the hip joint. 10 Name the muscles that flex the thigh also the leg 11. What are the divisions of the trifacial nerve? Name the branches of the third division 12 Describe the shoulder joint 13 Describe the prostate gland and give its relations. 14 Describe the anatomy involved in an operation for the radical cure of oblique inguinal hernia 15 Describe the distribution of the peritoneum

PATHOLOGIC ANATOMY

1 In the study of tumors or growths what macroscopic and microscopic characteristics would lead you to decide in favor of malignancy? 2 Classify tumors 3 Describe pathologic appearance of acute parenchymatous nephritis 4 Give the pathology of ophthalmia neonatorum 5 Give the pathology of dysentery catarrhal, ulcerative diphtheritic 6 What is a sarcomatous tumor? Give its pathology 7 Mention at least four varieties of ulceration seen in the gastro intestinal wall Describe the gross appearance of an amebic ulcer 8 Describe a tubercle What is its origin and what tissues are most frequently invaded by it? 9 Give pathologic characteristics of medullary type of carcinoma of the breast 10 Give gross pathology of endocarditis, and mention most frequent causes 11 What is the pathologic condition found in chronic Bright s disease? 12 Define hypertrophy atrophy give varieties and causes 13 Give differences between degeneration and necrosis 14 What is the microscopic appearance of the affected tissues in acute hyperplastic splenitis? 15 How would you distinguish between fatty degeneration and fatty infiltration?

SURGERY

1 Define opsonins, antibodies, embolism hypospadias and pyelonephrosis 2 Diagnosis and treatment of posterior dislocation of the hip joint 3 Treatment of uncomplicated fracture of upper third of the femur 4 Diagnosis of Pott s disease 5 Diagnosis of cancer of the female breast 6 Differential diagnosis of cancer and ulcer of the stomach 7 Diagnosis of intestinal obstruction 8 Describe operation of suprapubic cystotomy 9 Describe the Murphy Fowler treatment of enteroclysis 10 Describe operation for ligature of external carotid 11 Prophylaxis and treatment of tetanus 12 Cause, symptoms and treatment of acute noncalculous cholecystitis 13 Diagnosis of fracture of the base of the skull 14 Cause and treatment of decubital ulcers 15 Describe one method of operation for the repair of harelip

GYNECOLOGY AND OBSTETRICS

1 Define corpus luteum abortion menopause version and placenta praevia 2 Symptoms of retroversion of the uterus 3 Diagnosis of extra uterine pregnancy 4 Cause and treatment of rupture of the uterus during labor 5 Diagnosis of R O P before labor 6 Causes and treatment of retained placenta after full term delivery 7 Treatment of acute salpingitis 8 What are the difficulties for delivery in O P positions? 9 Name the sutures of the fetal head 10 Uses of pituitary extract in obstetrics 11 Give the causes and management of prolapsed cord 12 Treatment of postpartum hemorrhage due to laceration of the cervix 13 Describe operation for repair of *complete* laceration of perineum immediately after labor stating what kind of suture material is used Mention positive signs of pregnancy 15 What is meant by currettage of the uterus and when is it indicated?

THERAPEUTICS AND MATERIA MEDICA

1 Mention five drugs that are chemically incompatible with tannic acid 2 Mention five saline purgatives and state the dosage of each 3 What is the chemical antidote for arsenic? Give the dose of this antidote 4 Creosote properties, action and uses, dosage 5 Glycerin properties action and uses dosage 6 Ichthyol properties action and uses dosage 7 Give the indications for three remedies useful in metrorrhagia 8 What are secondary effects of alcohol on stomach liver vasomotor system nervous system? 9 What is the action and dose of apomorphin of pilocarpin? 10 What is an alkaloid a tincture a fluidextract? 11 What is the strength of normal salt solution? Give indications for its use and mode of administration 12 Give hypodermic dose of strychnin, sulphate of atropin sulphate of morphin apomorphin hydrochlorate nitroglycerin and pilocarpin hydrochlorate 13 Write a complete prescription for a diuretic containing no less than three ingredients 14 Potassii chloras properties action and uses dosage 15 Pulvis effervescens compositus dosage

BACTERIOLOGY AND HISTOLOGY

1 Tell in detail (1) How would you detect malarial organisms in blood (2) How distinguish between the quartan and estivo autumnal parasite? 2 Define toxins antitoxins amboceptors bacterioproteins lysins 3 Describe Widal s test for typhoid fever What is its diagnostic value? 4 Describe fully the organism recognized as the cause of syphilis 5 In a suspected case of pulmonary tuberculosis what laboratory methods should be employed to establish the diagnosis? Give the methods in detail 6 Describe in detail Gram s method of staining Mention two species of micrococci that may be distinguished from each other by this method. 7 Describe striped and unstriped muscle and name organs in which unstriped is found 8 What is the relative difference between the sympathetic and cerebrospinal fevers? 9 Name the coats of the arteries and give structural difference 10 Give composition of human blood 11 Mention different leukocytes and derivation of names 12 Give the normal histology of the skin 13 Explain the difference between active and passive immunity Illustrate by example how each may be acquired 14 Give the structure of the mucous membrane of the stomach 15 What structural differences are there between the malpighian corpuscles of the spleen and those of the kidneys? Make drawings

PHYSIOLOGY AND HYGIENE

1 What are the manifestations of cell life metabolism? Explain significance and give classification 2 Name end products resulting from digestion of the three principal types of food and explain how and by what channels they enter the circulation 3 Name the varieties of blood that circulate through the liver State the source and give the function of each. 4 What changes take place in the composition of blood as it passes through the kidneys? 5 Describe the sounds of the heart and give causes. 6 Discuss fully respiration 7 State the number of white corpuscles in a cubic millimeter of blood State the function of white corpuscles 8 What diseases are specially liable to be conveyed by ingestion of milk? 9 Describe the portal circulation 10 What are the uses of narcotics? Name the principal ones giving the doses of each 11 Suggest the prophylaxis of gastro enteric toxemia of bottle-fed infants 12 What is urea? What is the pathologic significance of urea in the urine? How estimated? 13 Discuss the influence of alcohol on the race Is it food or poison? 14 Is sanatorium treatment of tuberculosis worth while? 15 How dangerous is impure air? How tested? And what would be index of impurity? What hygienic measures should be observed in public schools?

Book Notices

A Treatise on Blood Pressure in Ocular Work With Special Reference to Factors of Interest to Refractionists By Eugene G Wiseman Cloth Price, $2 50 Pp 267, with 19 illustrations Rochester John P Smith Company, 1916

According to the introduction, the purpose of this book is "to acquaint the optometric profession with a science (sphygmomanometry) hitherto unemployed by it, but one which vitally concerns its future welfare" A careful reading of this book gives one the impression that the foregoing quotation is indeed true, it is hard to believe, however, that the "future welfare" of a certain manufacturer of sphygmomanometers is not also kept well in mind by the author The volume is written by a nonmedical man, and reflects a lack of scientific knowledge in unfounded assertions and disjointed arguments The book fills no want in the library of physicians, surgeons or oculists It contains nothing original, and is simply a review of what has been said by others, with conclusions drawn by the author, attempting to show that all "optometrists," opticians, etc, should equip themselves with a sphygmomanometer (particularly one of a certain make), thereby greatly enhancing their chances for success The placing of a highly scientific instrument, such as the sphygmomanometer, into the hands of an individual whose training has been only that found in the class referred to above could hardly result in any valuable benefit to the patient Its most marked function, under these conditions, would probably be its spectacular and psychologic effect on the patient, tending to impress him with the attainments of the examiner

Infant Mortality Its Relation to Industrial and Social Conditions By Henry H Hibbs, Jr Paper Pp 127 New York Department of Child Helping, Russell Sage Foundation, 1916

This book includes a series of papers representing an investigation of infant mortality conducted by the Boston School for Social Workers under a grant from the Russell Sage Foundation Certain factors, such as the character of the milk supply, the influence of artificial feeding, and the form of medical attendance, which have received extended discussion elsewhere, are not included in this report, nor has any attempt been made to determine, except roughly, the relative influence of the various factors discussed Chapters are devoted to the present position of infant mortality and its recent decline in the United States, the influence of prenatal conditions on infant mortality, infant mortality and the size of the family, the mother and infant mortality, and infant mortality, housing conditions, and influence of economic and industrial conditions The author concludes that the fundamental causes of an excessive rate of infant mortality are poverty, inadequate economics, and low standards of living The fundamental remedy is higher wages Other remedies, such as legislation restricting or regulating the employment of mothers before and after confinement, day nurseries, the instruction of mothers and schoolgirls in domestic economy, etc, have their places, but the chief thing remains the provision of an adequate family income

The Involuntary Nervous System By Walter Holbrook Gaskell, M A, M D, F R S Cloth Price, $1 80 net Pp 178, with illustrations New York Longmans, Green & Co, 1916

The volume represents the results and conclusions of more than thirty years of research on the origin, structure and function of the involuntary nervous system on the part of the late Professor Gaskell Our present day knowledge of the involuntary nervous system is largely due to the fundamental pioneer work of Gaskell and his pupil, Professor Langley The problems related to this nervous system are here treated in their widest biologic relations The book will be of interest to the medical man, despite the fact that it takes no account of the role of the involuntary nervous system in disease, such as vagotonia, pluriglandular affections, etc A clear conception of the biologic relations and role of this system in health must ever be the starting point in working out the complex behavior of the system in morbid processes

Medicolegal

Right of Claimant Against Employer to Sue for Malpractice

(Paulak vs Hayes (Wis), 156 N W R 464)

The Supreme Court of Wisconsin reverses an order which sustained a demurrer to the complaint in this action for alleged malpractice because the plaintiff had made a claim against his employer under the workmen's compensation act The court says that the plaintiff alleged that, while in the employ of a lumber company, he sustained a fracture of the leg, that he employed the defendant to treat him for the injury, and that by reason of the negligence and lack of skill of the defendant the leg was improperly set and treated, that at the time of the injury both the plaintiff and his employer were under the provisions of the workmen's compensation act, that the plaintiff made a claim against his employer under the act, and received compensation and part of his medical expenses from March 5, the date of the injury to about August 20, that as soon as he discovered the negligence of the defendant he refused to accept any more compensation from his employer, and offered to return the same or so much thereof as the court might adjudicate The circuit court sustained the demurrer to the complaint on the ground that, when the plaintiff filed a claim against his employer, his cause of action for the injury received and the proximate results thereof were assigned to his employer by virtue of the provision of the compensation act that the making of a lawful claim against an employer for compensation for injury or death of his employee shall operate as an assignment of any cause of action in tort which the employee or his personal representative may have against any other party for such injury or death But the supreme court says, it is quite evident from a reading of this provision that it contemplates the existence at the same time of two remedies either of which the employee may pursue, as the statutory remedy against his employer or the common law remedy against the third person who by his negligence caused or contributed to his injury, which was not the case here No duty or opportunity to elect between such remedies could arise until the facts creating the liability of the third person came into existence In this case they were not known to the plaintiff until about August 20, and there was nothing to show he was negligent in not sooner ascertaining them As soon as they came to his notice he promptly elected to hold the third person whose alleged negligence aggravated his first injury, and thereby he waived further liability against his employer It was competent for him to do so, or to hold his employer under the provisions of the compensation act This act requires the employer to furnish a physician, and makes him liable for the value of the physician's services for not to exceed ninety days This, the supreme court thinks, implies liability for any aggravation of the injury caused by the negligence of the physician treating the employee during such time Whether the employer would be liable for malpractice after the expiration of ninety days is not decided The negligent treatment here was alleged to have begun about two weeks after the accident

Sunstroke with Reference to Accident Insurance

(Bryant et al vs Continental Casualty Co (Tex), 182 S W R 673)

The Supreme Court of Texas reverses a judgment rendered in favor of the defendant company, and directs that one be entered for the plaintiffs, on an accident insurance policy which provided that, if sunstroke, due to external, violent and accidental means, should result, independently of all other causes, in the death of the insured within ninety days, the company would pay the principal sum as indemnity for loss of life The court says that the insured, while walking on the streets of Houston on an unusually warm afternoon in the month of August, in the ordinary course of his occupation as a collector of accounts, suffered a sunstroke from which he died on the following day The defense of the company was that sunstroke is a disease, and therefore not an accidental happening, that as a disease it was named as a risk of the policy, and that no indemnity was due for death resulting from it, under the policy, unless the preceding exposure was itself the consequence of an accident The court regards the question presented as an important one, and has been deeply concerned in its correct decision No decision of this question by a court of last resort in any jurisdiction was found There have been certain decisions which announce that sunstroke is a disease But whatever it may be, technically, it is not regarded as a disease in the popular mind In the common understanding it is accounted a kind of violent personal injury, from the very idea of sudden and external force carried by the word If classed by medical authorities as, technically, a disease—as to which it is not improbable that there is a conflict of expert view—to none but an expert medical mind would the provisions of this policy have carried the significance that it was insured against as a disease To men in general, such as those with whom a company of this kind deals and to whom its policies are issued, whether educated or ignorant, the use of the term in any character of contract and particularly the court thinks, in an insurance contract not generally insuring against death by disease, but against death from accidental injury, would have denoted merely what sunstroke is commonly understood to mean—heat prostration, frequently a casualty, a species of bodily injury, distinct in its kind and individual in its cause, and of known and not unusual occurrence With the term having, as it does, this recognized popular meaning distinctly different from any technical significance it may possess, the proposition that the latter must prevail in the construction of the policy is not to be allowed

Duty of the State to Restrain and Confine the Insane

(Hammon s Hill (U S) 228 Fed R 999)

The United States District Court, in Pennsylvania, in denying the petitioner a writ of habeas corpus against the superintendent of the Allegheny County Home and Hospital for the Insane, says that the petitioner based his right to discharge, notwithstanding his insanity, or presumptive insanity, on the unconstitutionality of the act under which he was committed, and that therefore he was restrained of his liberty without due process of law It appeared that he was restrained and confined in the asylum under and in accordance with the provisions of an act of assembly of the state of Pennsylvania, that this act is one of a number of acts constituting a system adopted by the state for the care of her insane, that the act, or the act to which it is supplementary, has not been declared unconstitutional, or in any respect illegal, by the courts of Pennsylvania, that these acts provide a method by which the sanity of the relator can at any time be judicially determined on his application, that it was not even alleged that at the time of his commitment, or at the time thereof, that he was sane, and it further appearing that his sanity was adjudged by a court of competent jurisdiction on a hearing on a writ of habeas corpus sued out under the act of 1883, this court concludes that he was not restrained in violation of any right guaranteed to him under the Constitution of the United States Nothing can be clearer than the duty of the state to restrain and confine the insane not only for their own safety and protection, but also for the safety and protection of the public The relation between the two is that of guardian and ward The confinement in an asylum is not of the same character as imprisonment for the punishment of an offense It is a necessity growing out of the inability of the mentally afflicted to care for themselves or prevent injury to others The state not only restrains the lunatic for his own protection and the safety of the public, but its duty extends so far as to include every provision known to medical skill and science for the treatment of the diseased mind Thus the work of the state in caring for the demented within her borders is at once protective in its character and highly humanitarian A state would indeed be derelict of its duty if it failed to make adequate provision for the care and treatment of the insane The state is the parens patriae (parent of the country) of the insane

Society Proceedings

COMING MEETINGS

Colorado State Medical Society, Glenwood Springs Sept 5 7
Michigan State Medical Society, Houghton, Aug 15 17
Oregon State Medical Association Portland Sept 9 10
Utah State Medical Association, Salt Lake City Sept 12 13

AMERICAN ASSOCIATION OF ANESTHETISTS

Fourth Annual Meeting held in Detroit, June 12, 1916

The President, Dr Willis D Gatch, Indianapolis, in the chair

Instruction of Medical Students and Hospital Interns in Anesthesia

Dr Willis D Gatch, Indianapolis Nothing can do more to improve the standing of anesthetists than to educate physicians generally in anesthesia, and the best place to begin is in the medical schools There is practically no course of instruction on this subject in any of them at present and state boards of examiners make no requirements in regard to it, with the possible exception of that of Pennsylvania It may be objected that the curriculum is already overcrowded, but this could be avoided by a proper correlation of subjects To the objection that not all students need this knowledge after graduation, it may be answered that all should know how to supervise the giving of anesthetics, even if they do not do the actual work. It is not always possible to learn what should be known concerning the various kinds of anesthesia and anesthetics during an internship in a hospital, for not all hospitals employ trained anesthetists

Why Spinal Anesthesia Fails

Dr W Wayne Babcock, Philadelphia Spinal anesthesia involves some technical difficulties The difficulty in regard to making the puncture properly may now be eliminated as a likely source of trouble, since the performing of lumbar puncture has become so general The second difficulty is in regard to the solution used Sometimes the anesthetic is not brought into contact with the nerve roots in sufficient concentration to interrupt their conductivity With different drugs the percentage required varies Another difficulty presented is to select the proper point of injection The solution should be introduced practically opposite the nerve root that it is desired chiefly to affect By using solutions varying in specific gravity from that of the cerebrospinal fluid and adopting particular postures with the patient, however it is possible to cause the solution to gravitate in such a way as to affect nerve roots at a distance from the point of injection If this is not taken into account, harmful results may be produced The position of the patient, therefore is of great importance Patients who are very nervous are not good subjects for this method In them, however, spinal anesthesia may be rendered more successful by preoperative medication Again, the operation sometimes fails because the type of operation is not suited to the method Unless the time consumed in the operation is short the patient may emerge from the effects of the drug before the operator has finished Finally, this method is not adapted to the mental make-up of some surgeons They must be able to adjust themselves to the peculiar conditions present, to make a success of it Spinal anesthesia is not the method to be selected in apparently hopeless cases It should not be employed where a local anesthetic could be used with as great advantage In patients with great resistance, who can stand a lowered blood pressure, it is possible to secure the most widespread muscular relaxation with complete anesthesia and the least protoplasmic change that can be secured by any method of anesthesia

DISCUSSION

Dr Ray A Rice, Columbus, Ohio We tried spinal anesthesia in the case of a tuberculous patient who was in rather bad shape for taking inhalation anesthetics on whom we intended to do a leg amputation Our pathologist prepared the solution and gave the injection He used cocain, about 1½ grains to the ounce The puncture was made successfully on the first attempt The patient, however, lost none of the ability to feel pain, although we waited for fully fifteen minutes, making trial at intervals The puncture was evidently made in the proper place, and the fluid came out nicely, but perhaps it did not come from the cord We had to resort to ether in order to perform the operation

Dr F L Richardson, Boston I have used tropacocain only, using the side method of injection I have had only one failure in getting into the spinal canal I have always made the injection in the lumbar region, depending on the amount of fluid I withdrew to mix with the drug, and the force with which I put it in, to get the height of the anesthesia I should like to ask whether Dr Babcock has difficulty in producing anesthesia in persons with a high spinal fluid tension Of course, the blood pressure varies considerably with spinal anesthesia, and you can control this with gas oxygen

Dr W Wayne Babcock, Philadelphia Sometimes we cannot depend on the solution In one instance that I know of, a surgeon used it twice in precisely the manner described in an article that I had written, yet in the first case there was no anesthesia produced, while in the second the patient died I believe that the needle was properly introduced, but it may be that a proper mixture was not made I have noticed a greater difficulty in the cases of persons with a high intradural tension when the fluid is drawn out with great force I believe that it is because the solution is apt to leave as soon as the needle is withdrawn We should take pains, before withdrawing the needle, to see that the solution is thoroughly mixed with the fluid It is always possible to produce a sufficient degree of anesthesia, if you take this precaution, in from three to five minutes

Experiments with Magnesium Sulphate

Dr S J Meltzer, New York There have been many investigations on the effect of calcium, potassium and sodium, but not of magnesium, perhaps because the action of this drug is to inhibit, so that it was dismissed as something of no importance Auer and I have published reports of a large series of experiments with magnesium sulphate, including subcutaneous injections We found that it depresses the entire nervous system, and even produces anesthesia Dr Peck of the Roosevelt Hospital, New York, at my suggestion operated on three men under anesthesia produced by intravenous injections of magnesium sulphate, nothing else being used They felt no pain, and one of them did not believe that the operation had been performed That settled the question as to whether real anesthesia is produced by magnesium sulphate or whether it has merely a curare-like effect, which some felt that so long as only animals had been operated on under its influence could not be answered positively I advise, however, that no one undertake to use this as an anesthetic until we are able to state definitely just how it should be handled I hope that it will turn out to be an entirely practical method

DISCUSSION

Dr Willis D Gatch, Indianapolis When I was an intern, a man was brought to the hospital in a state of coma, produced by his habit of taking 2 or 3 ounces of magnesium sulphate every day He got over the attack This was a case of complete magnesium sulphate anesthesia due to taking the drug by mouth, and I have often seen patients who I thought suffered from chronic magnesium sulphate poisoning from taking it in some form or other every day The only case of severe tetanus that I ever saw saved was saved by intraspinal injections of magnesium sulphate, but I believe that this treatment is dangerous, and should be resorted to only in cases that would otherwise certainly prove fatal

Dr James T Gwathmey, New York I should like to know the strength of the solution that Dr Meltzer used for intravenous injection

Dr S J Meltzer, New York Magnesium sulphate is a very good remedy to apply to burns of the first and second degree Some years ago, I had fifteen cases of erysipelas in which I used this remedy, and found that the patients were all relieved of the inflammation I used to think that taking magnesium sulphate by mouth could not produce anesthesia, but two years ago we found that we could kill any animal by injecting it directly into the intestinal canal I think that in cases of jaundice with pain it might be practical to introduce it into the duodenum by means of the duodenal tube The pain in these cases is due to colic, two antagonistic muscles contracting at the same time The fibers of the gallbladder contract and try to force the bile out, while the sphincter of the common duct is also contracting and prevents its escape

Essence of Orange-Ether Sequence by the Closed Method

Dr I D Kruskal, Brooklyn This method overcomes the usual objections to a closed method It has been used in 1,000 cases without a fatality of any kind It furnishes a volume of air sufficient for respiration with an amount of anesthetic sufficient to produce anesthesia Rebreathing of small quantities of carbon dioxid is a means of maintaining cardiac and respiratory function and preventing shock The patient leaves the table in good condition, and recovery is shorter than by any other method of ether narcosis There is an absence of prolonged nausea and vomiting The vapor is constant in strength, moisture and warmth Ether waste is eliminated The average time required to get surgical anesthesia is six minutes This method approaches the ideal more closely than other methods on account of the rapid, pleasant induction, devoid of excitement, the even maintenance, under perfect control, with perfect relaxation, the air supply, sufficient for oxygenation, with partial rebreathing, and the prompt and uneventful recovery

DISCUSSION

Dr Ray A Rice, Columbus, Ohio In my opinion, the open method is very inferior I now use a semiclosed inhaler drop method of my own to get my patients to sleep, but when they are well relaxed, I switch to an entirely closed method, which is different from Dr Kruskal's in that I vaporize the ether by passing oxygen through it It is entirely a rebreathing method The patient gets no outside air at all, the nasal passages being stopped up This gives the most perfect anesthesia that I have ever seen The patient has to be relaxed entirely before the breathing tube is inserted There is sometimes a coughing and strangling sensation, which the patient does not, of course, know about I have used this method for a year or more with entire satisfaction I think that the rebreathing method stimulates respiration and heart action, and prevents shock

Dr Isabella C Herb, Chicago Dr Kruskal gives the average length of induction as six minutes I give seven minutes as mine My patients never have coughing or strangling, because I give plenty of air in the beginning which does not lengthen the time required for giving the anesthetic If you employ vapor and concentrate it, the patient will hold his breath You must give enough anesthetic to keep the patient asleep The operation will regulate the amount needed for this At certain stages of the procedure, the patient must be kept more soundly asleep than at others Nausea and vomiting, we might say, are things of the past We would not average more than 15 per cent of cases of vomiting with the open method I have never seen shock produced by an anesthetic If the patients die it is not from shock, really, but from paralysis I have noticed, many times, the rapid breathing which accompanies the rebreathing method You never see that in the open method of etherization We do not have excitement, except in alcoholics, but that occurs, regardless of the method which is employed Of course, Dr Rice does not give his patients outside air, because it is the oxygen of the air which is required, and they are getting all of that which they require

Dr Charles K. Teter, Cleveland The success of the anesthesia depends more on the skill of the anesthetist than on the method he may use Instead of using the nitrogen in the air, I use the oxygen with a small amount of nitrous oxid, and I find that I obtain better results than from just using the oxygen passed through ether It prevents an overpercentage of carbon dioxid in the breathing mixture The point of the whole thing is accuracy and constancy of dosage

Dr L S Holmer, London Ont I should like to ask whether Dr Kruskal uses preliminary medication, and what lung complications he has with his method in comparison with the open drop method

Dr. Walter M Boothby Boston It is a mistake to let the teaching go out that ether will not produce lowering of the blood pressure You can put the patient into a definite surgical shock by this means, if you push the anesthetic too far The word shock' has been used a great many times this morning, but I think that the word collapse' would be better

Dr James T Gwathmey, New York I do not think that any of us now know which is the better the open or the closed method I look on the gas ether sequence and the drop method as two pioneer methods that should now be methods of the past The drop method is inaccurate I have never seen a patient struggle under this method All my patients have preliminary medication I think that 2½ ounces of ether in an hour s administration, when absolute relaxation is obtained, cannot be approached by the drop method I believe the success of Drs Kruskal and Rice depends on getting the anesthetic well mixed before reaching the patient

Dr. Willis D Gatch Indianapolis Do you use a positive intrapulmonary pressure?

Dr. I D Kruskal, Brooklyn The bag is two thirds distended, so there must be a positive pressure of 8 or 10 mm

Dr E J McKesson, Toledo Ohio With the bag two thirds distended the pressure will not run over 3 mm

Dr. M P Denton, New York I think that 5 mm would be the proper amount

Dr. Charles K Teter, Cleveland I have found that with the bag a considerable distance from the patient and with a pressure of 5 mm in the bag, there was a negative pressure during inhalation I now take the bag up directly to the inhaler With a large opening and with 4 mm of pressure in the bag the inhalation pressure is 2 5 mm

Dr F L. Richardson, Boston I think that the time is coming when we shall not stick to any one method, but shall select the method adapted to the particular case

Dr. I D Kruskal, Brooklyn We can induce anesthesia with gas oxygen, and then change to ether vapor I do not see any particular advantage in using oxygen instead of air, except in grave surgical risks In all cases I give morphin and atropin, but never scopolamin I would not go back to any method except a vapor method of ether administration I think that there is a decided advantage in furnishing definite quantities of ether mixed with air directly to the patient In regard to the question about pulmonary complications, these were difficult to follow in this series, because many cases were acute surgical conditions Pulmonary infarcts and emboli occurred in these conditions, but I could not tell whether they were purely postoperative pneumonias or the result of the operation. I realize that open and semi-open ether can be given with satisfaction, and that most of us could in a simple ordinary, fifteen minutes' procedure, get as good results with them I have limited the cases in this paper however, to grave surgical conditions.

Anesthesia in Epileptics

Dr Walter H Mytinger, Cincinnati These cases are uniformly difficult to handle A long preoperative treatment, preferably in an atmosphere conducive to mental rest and physical quiet, is desirable A hypodermic injection of morphin with atropin has been used in adult cases as a routine procedure The best results are obtained with this if given one hour and fifteen minutes before the operation Nitrous oxid would seem to me to be the anesthetic of choice It is difficult to obtain abdominal relaxation by gas-oxygen, even when nerve blocking is also employed One must resort freely to the ether attachment, to use chloroform to the extent that might be required would be dangerous The induction period is prolonged and one must often wait for a convulsion to subside before taking the patient to the operating room After administering anesthetics to a number of these patients one gets the impression that one is giving a double anesthetization Nearly always the induction has to be performed twice

DISCUSSION

Dr George W Crile, Cleveland I should like to ask how often Dr Mytinger found convulsions present in his cases before or after induction

Dr Mytinger Cincinnati It was almost the rule

Dr I H McMechan Cincinnati It is interesting to consider whether in the anesthesia of epileptics of some types, the proper local anesthetic would not solve the problem encountered in the onset of the epileptic seizure during general anesthesia One of the physicians associated with the Hospital for Epileptics at Gallipolis, Ohio, said that it was the invariable rule that all the patients presented the symptoms of petit or grand mal during the induction stage of anesthesia She also corroborated the statement that patients become practically anesthetized and ready for operation when the epileptic seizure takes place, and the anesthetic procedure has to be renewed

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

Arizona Medical Journal, Phoenix

May IV No 5 pp 1 22

1 Typhus C C Pierce
2 Possibility of Preventing Laryngeal Phthisis S H Watson, Tucson
3 Sociologic Importance of Eyesight D F Harbridge Phoenix

Arkansas Medical Society Journal, Little Rock

July XIII No 2 pp 27-43

4 Nervous Diseases Associated with Pelvic Disorders G H Moody San Antonio Texas
5 Dangers of Pathologic Conditions R L Saxon Little Rock.
6 Dislocation of Eleventh Dorsal Vertebra Fracture of Spinous Process Tenth Eleventh and Twelfth Dorsal Vertebra Paralysis of Both Legs J M Lemons Pine Bluff

Boston Medical and Surgical Journal

July 20 CLXXV No 3 pp 71 112

7 Epidemic Poliomyelitis, Symptomatology and Diagnosis in Acute Stages I R Fraser New York.
8 Anatomic Form and Posture, Important Factors in Treatment of Pulmonary Tuberculosis J E Goldthwait Boston
9 Teaching of Therapeutics as Branch of Applied Physiology I H McCrudden Boston
10 Exfoliative Dermatitis Following Neosalvarsan Injections R Bine San Francisco
11 Review of One Hundred and Twenty Seven Clinical Cases of Ataxic Paraplegia G H Bigelow, Boston

9 Abstracted in The Journal, March 4, p 767

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

July IX No 1 pp 1 9

12 Artificial Production of Monstrosities E R Stockard Ithaca N Y

Canadian Medical Association Journal, Toronto

July VI No 7 pp 577 672

13 *Drugs and Medicinal Agents Considered from Professional, Economic and National Standpoints A. D Blackader Montreal
14 Surgical Treatment of Gastric and Duodenal Ulcer A E Garrow Montreal
15 Operative Treatment of Simple Fractures E R Secord Brantford
16 Penetrating Gastric Ulcer with Specimen E M von Eberts Montreal
17 Congenital Pyloric Stenosis Living Case E M von Eberts Montreal

13 **Drugs and Medicinal Agents from Professional and National Standpoints**—The importance of drug therapy is emphasized by Blackader He says that ailing patients demand some mitigation of their troubles and by means of official drugs, properly employed in proper doses, we are able to give all possible relief He deprecates the long list of drugs in the Pharmacopeia In his teaching work he yearly decreases the number of those taught to his students and emphasizes to them the greater importance of knowing a few drugs thoroughly, rather than of knowing many drugs

69 *Pharmacology of Novocain R A Hatcher and C Eggleston, New York.
70 *Influence of Atropin and Pilocarpin on Glycogenic Function H McGuigan, Chicago

67 **Action of Strophanthus on Heart**—The peculiar slow contraction, sometimes vaguely referred to as 'heightened tone," which in the deeply strophanthinised heart precedes the apparent active contractions, being unassociated with any refractory state, according to Tait and Pringle does not involve physiologic activity in the muscle They agree with Schmiedeberg that the heightened tone is really an increase of elasticity Roy, dealing specially with the question of elasticity of the heart, could not identify the change produced by digitalis with an increase of elasticity With Roy's view the authors do agree They claim that certain peculiarities in the record of a perfused strophanthus-ventricle find their only explanation in the increase of elasticity produced by the drug

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Journal-Lancet, Minneapolis

July 15 XXXVI No 14, pp 403 434

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effectiveness of the cure 2 It is of great help when administered in the ambulatory cases the effect being even more favorable than the usual remedies, such as bismuth 3 Inasmuch as scarlet red in no way interferes with the administration of other remedies such as the alkalies or atropin these may be administered when indicated at the same time and in fact, the effect of the combination is at times most beneficial

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Indian Journal of Medical Research, Calcutta

April III No 4 pp 565 789

7 Dose of Alum for Clarification of Water by Precipitation J Morison
8 Apparatus for Purification of Water for Troops R S C Brown
9 Flies and Their Relation to Epidemic Diarrhea and Dysentery in Poona J Morison and W D Keyworth
10 Serologic Investigation and Classification of Cholera Like Vibrios Isolated From Water in Calcutta E D W Greig
11 Tree Hole Breeding Anopheles From Southern India A (Cellia) diazesis) Culiciformis Cogill S R *Christophers and* K Chand
12 Measurement of Degree of Agglutination W F Harvey
13 Vaccination W F Harvey
14 Applications of Kinetic Theory of Gases to Vital Phenomena A G McKendrick

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16 Contribution to Study of Kala Azar J W Cornwall and H M LaFrenais
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18 Study of Hemoprotozoa in Portuguese India F De Mello and L J. Braz De Sa
19 Arneth's Index in Laboratory Rabies J W Cornwall and S R Aiyar
20 Differentiation of Dysentery Bacilli by Their Agglutination Reactions M K Pai and S R Krishnan

Lancet, London

July 1, II No 4844, pp 1 44

21 *Fate of Patients Who Have Had Stones Removed From Kidney J Bland Sutton
22 Prevention and Treatment of Cholera S M Cox
23 *Cause and Nature of Changes Which Occur in Muscle After Nerve Section J N Langley
24 Diagnosis of Cancer of Stomach J A Lindsay
25 *Substitute for Peptone and Standard Nutrient Medium for Bacteriologic Purposes S W Cole and H Onslow
26 Shockless Operation P Lockhart Mummery
27 Intestinal Toxins and Circulation D T Barry
28 Kala Azar in Soldiers Returning From Malta G R Ward
29 Abdominoperineal Resection of Rectum by Coffey's Modification of Two Stage Operation L C Panting
30 Asphyxia From Defective Shipboard Ventilation G E Brooke
31 Case of Advanced Intra Abdominal Pregnancy B R Vickers
32 Annual Report for 1914 of Registrar General J F W Tatham
33 Portable Fracture Box J D Buxton

21 **Prognosis of Stone in Kidney**—The conservation of a disorganized and septic kidney, Bland-Sutton says, exposes patients to the risk of future suffering from recurrent calculi This entails repeated operations and, finally, removal of the kidney under adverse conditions Endeavors to save such damaged kidneys are not examples of cautious surgery, but rather glaring instances of surgical timidity Many patients suffer much discomfort, even misery, from a timid nephrotomy when their best interests demand bold removal of the disorganized kidney When a kidney is septic, calculous and disorganized, if its companion is normal the diseased kidney should be removed

23 **Muscle Changes After Nerve Section**—The degree to which electric stimulation prevents wasting of the muscles, Langley says, cannot be determined with any accuracy Experiments on this point were recently made on rabbits by Kato and Langley The tibial or peroneal nerves were cut on both sides and the paralyzed muscles stimulated on one side with condenser currents These experiments, while suggesting that contraction delayed the wasting of the muscle, were not definitely in favor of the theory of "disuse atrophy," for in each experiment great wasting of the muscles occurred and the sluggish response to electric stimulation characteristic of denervated muscle was not prevented Langley concludes that the changes which take place in muscles after nerve sections are not due to absence of contraction, and that the term "disuse atrophy" is a misnomer It was noticed by Kato and Langley that muscles from about the fourth day after section of their nerves are in a state of continuous fibrillation, namely, the separate muscle fibers contract rhythmically, but with different rhythms, the muscles present a shimmering appearance when viewed by light reflected from their surface The contractions cause no movements of the muscle as a whole, and are easily overlooked As each fiber contracts many times the total expenditure of energy in the day must be considerable Langley believes that it is reasonable to suppose that this continued activity of the muscle fibers must cause fatigue and that the atrophy of muscle is due to too great rather than to too little functional activity The changes in reaction which occur in denervated muscle are, in fact, like those caused by fatigue

25 **Substitute for Peptone**—Experiments were made by Cole and Onslow with various mediums containing an abundant supply of amino-acids The growth on such mediums of a large number of pathogenic organisms is rapid compared with their growth on the recognized standard mediums The supply of free amino-acids is best obtained by the tryptic digestion of casein, and to procure uniform results a pancreatic extract is used, prepared by a special method described fully in the paper

Medical Journal of Australia, Sydney

June 3, I, No 23, pp 447 462

34 Cystic Ovaries W Ritchie
35 Case of Coal Gas Poisoning E L Crowther
36 Right Laryngohemiplegia Following Goiter Operation Right Abductor Paresis From Pressure of Enlarged Cervical Glands L G Davidson

June 10, No 24, pp 463 478

37 Eighty Cases of Wounds of Head Seen in Base Hospital in France J F Fairley

June 17, No 25, pp 479 496

38 Australian Voluntary Hospital in France G Horne
39 Some Functions of Thyroid Gland and Their Relationship to Goiter S Pern
40 Successful Case of Esophagotomy for Removal of Plate of False Teeth H Bullock
41 History of Small Urinary Calculus J B Nash

Sei-I-Kwai Medical Journal, Tokyo

June, XXXV No 6, pp 29 34

42 *Investigation of Diabetes Mellitus Among Japanese S Iwai

42 **Diabetes Mellitus Among Japanese**—The tolerance of the Japanese for sugar seems stronger than that of the Europeans The fact that there are more mild forms of diabetes and less severe cases of it among the Japanese, Iwai suggests, may be due to this difference in the tolerance for sugar Among the Japanese, women seem to have stronger tolerance than men The fact that there is less diabetes among women than among men may also be due to this stronger tolerance of women, but there is more room for further study in this regard The excess of starchy food alone cannot make glycosuria in healthy people, this fact may shed light on the fact that there are few diabetics among the Japanese whose chief food is of a starchy nature

Bulletin de l'Académie de Médecine, Paris

June 20, LXXV, No 25, pp 729 758

43 Fatal Tetanus Ascribed to Catgut Used at a Herniotomy C Nicolle and H Bouquet
44 Necessity for Use of Standardized Vaccine (Ce que doit etre le vaccin animal utilise pour les vaccinations publiques) L Camus
45 Fresh Milk Favorable Culture Medium for Typhoid Bacilli, Souring Destroys Them (Nouvelles observations sur le mecanisme de la propagation de la fievre typhoide par le lait) A Trillat
46 Superposed Typhoid and Paratyphoid (Les fievres typhoides intriquees) A Chantemesse and A Grimberg

Lyon Médical

June, CXXV, No 6 pp 177 244

47 *Deficiency Disturbances in Infants (La carence alimentaire chez l'enfant) E Weill and G Mouriquand

47 **Deficiency Disturbances in Infants** — Weill and Mouriquand remark that quite frequently the dietetic deficiency responsible for the disturbances is the direct result of the physician's advice The sterilization of milk is carried too far, or the starches are in too fine a form, too thoroughly bolted, and used too exclusively Deficiency disturbances may develop on breast milk, a fact that has only recently been emphasized Certain infants do not thrive on certain breast milks even when the milk is seemingly good and abundant The child may present anemia and fail to develop properly The manifestations from "deficiency" milk, in the course of breast feeding, are most characteristic in the regions where beriberi prevails The nursing woman with beriberi may transmit it in a grave form to her nursling It survives only if a change is made in time to milk that is not of this deficiency type Even if the nursing woman is still healthy, a too exclusive diet of polished rice may modify her milk in such a way that the nursling feels the deficiency effect and malnutrition results Neither infection nor intoxication explain such facts Outside of beriberi regions such extreme types are not known, but they show that the diet of nursing women should not be *too* exclusive in any line and should include fresh vegetables and fruit, etc

In regard to artificial food, Weill and Mouriquand state that they have never encountered a case of scorbutus among infants fed on freshly sterilized milk Even on the commercially sterilized milks and artificial foods it takes months for the child to develop actual scorbutus It seems as if it must bring into the world with it a supply of the necessary ferments which it takes long to use up, and a little orange juice, raw meat, etc., rapidly restores the supply Deficiency disturbances are liable to develop on any cereal hulled too completely, as well as with pod vegetables hulled and sterilized too thoroughly By adding overbolted starches to the oversterilized milk, the onset of the disturbances is hastened and they are rendered more severe Weill and Mouriquand have been making a study of deficiency diets since the war began, with a view to warding off all disturbances of the kind from the troops A long list of their communications presented at meetings of the Societe de Biologie in the last two years is appended The latest ones were entitled 'Research on Cats Fed Exclusively on Meat Raw, Frozen, Salted, Boiled or Otherwise Sterilized" and *'Graines de cereales decortiquees hypercarencees par la sterilisation"*

Paris Médical

June 24 VI No 26, pp 581 596

48 War Wounds of the Skull and Their Treatment (Lesions du crane par projectiles de guerre) H Hartmann
49 *Importance of Examination and Treatment of Rhinopharynx in Epidemic Meningitis. (Cytodiagnostic de l'adenoidite posterieure a meningocoque son role dans le diagnostic et le traitement de la meningite cerebro spinale epidemique) G Rosenthal and J Cheville.
50 Atrophy of Muscles and Deep Hyperesthesia as Signs of Chronic Apical Lesion Below R M Beauchant
51 The Preceding Condition in Estimating Amount of Pension for the Incapacitated (De l'etat anterieur dans l'appreciation de l invalidite des militaires) Granjux
52 *The Metal Helmet (L efficacite de protection du casque d'infanterie.) P Sollier
53 *Petrolatum in Treatment of Constipation (Notes pratiques sur l'emploi de l huile de vaseline ou de paraffine dans la constipation) Le Tanneur

49 **Diagnosis and Treatment of Meningitis by Way of the Rhinopharynx**—Rosenthal and Cheville reiterate that epidemic meningitis starts in adenoids—Luschka s tonsil—and hence it can be detected and possibly aborted by examination and treatment of this region With this specific inflammation this third tonsil is abnormally hard, and smears show diplococci and associated bacteria with the characteristic debris of blood corpuscles the polynuclears predominating and very much altered, gram-negative diplococci within and outside of the cells, with scanty epithelial cells By means of this cytodiagnosis the disease can be detected in its incipiency and traced into convalescence If the smear shows numerous epithelial cells and diplococci taking the Gram stain, the probability of epidemic meningitis is slight As long as the findings are of this characteristic type, there can be no question of convalescence even although the symptoms may have subsided The pseudoconvalescent is still a menace to himself and the community The rhinopharynx should be treated with the specific antiserum as well as the meninges For this they inject daily through the nostrils a medicated oil mixed with equal parts of antimeningococcus serum The meningococcus adenoiditis they reiterate, is the primordial and primitive lesion the fundamental, initial and terminal, substratum of infection with the meningococcus As long as it persists the patient is infected, not a mere carrier, and specific treatment of the rhinopharynx is indispensable

52 **The Metal Helmet.**—Sollier calls attention to the fact that the helmet is a much better protection when it is set on loosely and is not fastened on When struck by a fragment of shell it yields and is pushed off the head, thus saving the skull much better than when it is held tight by a chin band and is unable to yield at the impact He also suggests that there should be a space left between the leather inner lining and the metal This would prevent injury from the sharp edges turned in by the flying shell

53 **Liquid Petrolatum in Constipation**—Le Tanneur points out that a vegetable oil is unable to serve as a lubricant for the feces until the amount ingested surpasses the dose normally saponified by the liver and pancreas Hence to take olive oil for the purpose, as some recommend, imposes a useless burden on these two organs Liquid petrolatum, on the other hand, seems to traverse the alimentary canal without exciting any reflex action in the liver Three years of experience with refined liquid petrolatum have confirmed its valuable lubricating action and its healing influence on the minute excoriations from abnormally hard feces At necropsy of persons who have been systematically taking liquid petrolatum he has found the appendix literally stuffed with it, and adds that its presence in this way guarantees sterility from the microbian point of view He orders one or two tablespoonfuls a day after dinner at night or before breakfast, keeping it up for two or three weeks, repeating the course as needed The physician must realize, he declares, that in this he has an absolutely marvelous means at his disposal for keeping constipation under control without drastic measures But he must impress on the patient that it is a course of treatment, aiming at a durable cure in time

Presse Médicale, Paris

June 22 XXIV No 35 pp 273 280

54 Bacteriologic and Serologic Diagnosis of Associated Typhoid and Paratyphoid (Les fievres typhoides intriquees. Technique) A Chantemesse and A Grimberg
55 Indications for Removal of Projectiles in the Lungs (Les indications de l extraction des projectiles intra pulmonaires) Piery
56 Quantitative Evaluation of the Globulins in the Cerebrospinal Fluid (De la recherche des globulines dans le liquide cephalo rachidien par les procedes de Nonne Apelt et de Noguchi Moore) V Demole

June 29 No 36 pp 281 288

57 Epidemic Bacillary Dysentery at Morocco 1915 G Boudet
58 *Tropical Dysentery Found Endemic in Spain (Les premiers cas de dysenterie tropicale en Espagne) I F Martinez

58 **Tropical Dysentery in Spain**—Martinez has discovered that what is known as tropical dysentery is at home in southern Spain He has found the histolytic endameba in the stools of persons who had never been out of Spain Emetin proved as successful in curing such patients as in its record elsewhere His previous recent research has likewise confirmed the identity of certain affections endemic in southern Spain with leishmaniasis, both kala-azar in children and oriental sore These supposedly tropical and exotic affections he has thus revealed are endemic in his country

Correspondenz-Blatt fur Schweizer Aerzte, Basel

June 24 XLVI No 26 pp 801 832

59 *Technic for Measuring the Blood Pressure and Testing the Functional Capacity of the Heart and Interpretation of the Findings (Ueber Messung des Arteriendruckes und Prüfung der Herzfunktion) H Schulthess
60 Arrhythmia H Ryser Continued

59 **Testing the Heart and the Blood Pressure**—Schulthess discusses what we can expect to learn from the blood pressure and heart functioning, and extols the improved technic he has worked out for the purpose He emphasizes that the blood pressure in an artery is the result of cooperation of a large number of factors, representing different conditions and processes in the circulatory apparatus The more exactly we can measure the minimal and the maximal pressure and the pulse curve as a whole, the better insight we get into these separate factors In a series of tests, when he applied the pneumatic cuff to the arm the pressure at which the peripheral pulse was shut off was about 125 mm mercury in 107 young men and twenty young women all healthy, and seated The pressure was found equally high on an average in his patients with heart disease but very frequently either higher or lower It is thus impossible he declares, to set any figure as the normal standard for the pressure or pulse rate We can speak only of a 'normal range,' and a single examination is never decisive He states that with his modification of O Frank s mirror sphygmograph, it is possible to determine the minimal pressure with precision In 200 patients he found it averaged 100 mm mercury The normal range of about 80 rose to 100 with valvular defects, to 130 with arteriosclerosis and to 150 with nephritis Schulthess has also devised a model of the circulation which pumps with a pulse approximating the human pulse, and, as the various factors are under control separately, it help explain the human pulse

He tests the heart action and pulse before and af the patient has gone quietly up and down stairs Healthy persons show a slightly accelerated heart beat after going up the stairs six times, but the pulse is not affected When the heart is insufficient, the pulse becomes smaller as the systole is less complete and the amount of blood expelled is less The heart is mainly responsible for the changes after exercise, and he records the pulse rate and the blood pressure—what he calls the pulse-shutting-off pressure *(Pulssperrdruck)* before the exercise, and each minute afterward for five minutes When both, starting with normal figures, run up high together, this speaks for nervous overexcitability of an organically sound cardiovascular apparatus When the pulse rate runs up high while the arterial pressure falls, there is some organic defect, mitral insufficiency or stenosis, possibly otherwise latent

He warns against letting patients know the figure of their blood pressure Those with arteriosclerosis are the ones most interested, and they go from one doctor to another and as the various instruments do not always give concordant findings, the patients come to mistrust the physician's statements, and here again, he says, "we physicians have cut into our own flesh" The lower blood pressure from time to time with the same instrument may be from treatment, abuse of iodids with weakening of the heart's energy, or other factor which simulates a deceptive improvement Schulthess tells his patient merely, "Your blood pressure corresponds to your age, your constitution," or "is high, and we must seek for the reasons of this high pressure and combat them as called for" The arterial pressure is a guide, but not for the patient, only for the physician In conclusion he emphasizes that the findings by this method of functional tests may reveal the purely functional nature of disturbances and thus be of more practical importance than the discovery of a valvular defect

Gazzetta degli Ospedali e delle Cliniche, Milan

June 22 XXXVII No 30 pp 785 800

61 Projectile Loose in Pleural Cavity (Corpi stranieri vaganti nella pleura) S Gangi, (Projettile libero nella cavita pleurica diagnosticato radiologicamente) G Ceresole

Policlinico, Rome

June 25 XXIII, No 26, pp 805 836

62 Present Status of Military Surgery (Note sintetiche di chirurgia di guerra) G Mafera
63 Intravenous Serotherapy of Meningococcus Septicemia, Two Cases, Recovery T Dal Canton

Riforma Medica, Naples

XXXII No 16 pp 421 448

64 Technic and Results of Multiple Vaccine (Sul valore immunizzante del tetravaccine Castellani tifo + paratifo A + paratifo B + colera) F P Titone
65 Traumatic Paralysis of Reflex Origin P Boveri

No 17 pp 449 472

66 *Tumors Below the Thalamus in the Midbrain (Su tumori della regione ipotalamica del cervello intermedio) S Liverato and G F Cosmettatos

No 18 pp 473 500

67 Heart Neuroses and the War (Le nevrose di cuore e la guerra) A Ceconi
68 Acute Delirium (Considerazioni sul delirio acuto) A Salern

66 **Tumors in Chiasm Region**—A case with necropsy findings demonstrates anew that the loss of the sense of smell may be a comparatively early symptom of a tumor below the thalamus in the midbrain The anosmia may aid in locating the tumor The case reported shows further that the anterior portion of the optic thalmus does not seem to have any definite physiologic significance Also that a tumor may develop in this region and grow to a large size without injuring the hypophysis, apparently, in any way either anatomically or functionally

Brazil-Medico, Rio de Janeiro

June 10, XXX No 24, pp 185 192

69 The Reasoning of the Insane (Raciocinio nos alienados) H Roxo Commenced in No 23

June 17, No 25, pp 193 200

70 *The Blood in Yellow Fever (Contribuição ao estudo da hematologia da febre amarella) E P M Bittencourt

70 **The Blood in Yellow Fever**—Merely the conclusions are given here of Bittencourt's thesis They are based on study of twenty cases He found the changes noted constant in all the cases, whatever the type of the case There was always hypoglobulia and the number of whites was much below normal all the time, while the hemoglobin percentage was not much changed or even a little above normal The blood coagulates unusually fast, and the serum is of a yellow or orange tint The greater the displacement toward the left of the Arneth blood picture, the more unfavorable the prognosis The blood reaction bears a certain resemblance to that of typhoid fever

Grèce Médicale, Athens

February 1 and 15 XVIII No 3 4 pp 5 8

71 *Partial Collapse of Lung Induced by Paraffin (Traitement chirurgical de la tuberculose pulmonaire par decollement de la plevre parietale, et affaissement partiel du poumon, tamponne par la paraffine) G Dre Kolias Commenced in No 1
72 *Amebic Dysentery in Greece (Sur quelques traits de la dysenterie amibienne en Grece) I Cecikas

71 **Partial Collapse of Lung Induced by Paraffin**—The first part of Dre Kolias' article was listed in these columns May 13, 1916, p 1590 He here records the later findings in the case reported, all testifying to the beneficial action of the operation, permitting the lung to collapse, after releasing it from the parietal pleura The lung was then immobilized to a certain extent by injecting paraffin He says that Tuffier's operation of decortication of the lung has been done in only twenty cases to date, but the results have been very favorable, while the technic is simple and easy, as Dre Kolias has amply confirmed on the cadaver The lung can be compressed and immobilized with paraffin when conditions forbid artificial pneumothorax

72 **Amebic Dysentery in Greece**—Cecikas relates that in a recent series of amebic dysentery cases, the correct diagnosis was made in only 19 per cent at first, all the others presenting various other affections, enterocolitis, malaria, a polyp or fistula in the rectum or hemorrhoidal catarrhal trouble Three of the patients were children, and all were at some summer resort at the time In all, the reds were far below par, the indican output was increased, and all complained of a vague pain in the abdomen, increasing at defecation, the stools growing more and more numerous, at intervals, the last stool in a series containing blood and pus with more or less mucus The abdomen showed little change, offering no resistance to ordinary palpation but stiffening, and sharp pain being felt, especially behind the pubis, on the left side, when the hand was worked in deep Digestion was not much impaired and proctoscopy usually was useful only in that it excluded other affections In some cases, however, a typical abscess was disclosed The clinical picture of the amebic dysentery was much milder than is the rule in tropical countries Persons from the tropics had been stopping at the various hotels where the contagion occurred The drinking water and the cultivation of vegetables were above suspicion at the places involved Contagion probably occurred by the water, vegetables or fruits becoming contaminated just before serving—none of those infected had slept in the room with any suspects The Brazilian ipecac treatment was applied in three cases, the course had to be repeated in one, and a relapse followed a month later One patient was given the ipecac by the drip technic, but vertigo and vomiting followed with visual disturbances and symptoms of gastro-enteritis The others were treated with emetin and castor oil with invariably good results

Acta Scholae Medicinalis Univ Imp in Kioto

I No 1 pp 1 133 German Edition

73 *Clinical and Experimental Study of Intracutaneous Resorption (Die intrakutane Resorption) M Kasahara
74 Biochemical Transformation by Bacteria of the Primary Disintegration Products of Albumin II (Ein optisch differenter Abbau des l Tyrosins durch Proteus bezw Subtilis) T Sasaki
75 *Experimental Study of Formation of Urine Indican III (Zur Frage über die Bildung des Harnindikans I Fütterungsversuch mit einer grossen Menge Tryptophan II Ueber das Verhalten der Phenylglycin o carbonsaure im Tierkorper) C Asayama

74 Absorption of Fluids Injected Into the Skin—The hundred pages of Kasahara's report of his experimental work and clinical experiences contain seventy tabulations of details The data all confirm the slower absorption from within the skin, as the absorbing power is less than just below the skin But he found that the superficial lymphatics of the corium take up corpuscular elements and bacteria so that intracutaneous injection of bacteria is followed by the signs of positive vaccination earlier and more distinctly than is the case with subcutaneous inoculation, while the local process can be traced and the findings more easily studied Intracutaneous inoculation is the best method he states, for enhancing the virulence and testing the toxicity of bacteria and for differentiating certain strains When tubercle bacilli are injected into the skin of the guinea-pig a red papule develops which opens spontaneously and becomes transformed into an ulcer which never displays any tendency to heal The regional lymph glands swell at the same time These changes occur earlier and in a more pronounced form with intracutaneous than with subcutaneous inoculation Intracutaneous reinfection of an already tuberculous guinea-pig induces an accelerated reaction at the point of the injection Normal cerebrospinal fluid induces no reaction when injected into the skin and thus serves in differentiation of meningitis

75 Formation of Urine Indican—Asayama fed rabbits with an extract of soy beans and then introduced 1 gm tryptophan into the stomach through a tube The urine afterward gave a most striking and pronounced reaction for indican when before there had been none or merely traces His tables give the details of these experiments which he says, have for the first time actually demonstrated the production of urine indican by physiologic means from tryptophan one of the building-stones of albumin

Russkiy Vrach, Petrograd

XV No 19 pp 433-456

76 Cardboard Splints for the Shoulder R R Faltin
77 Improved Pedal Control of Flow of Saline etc (Automaticheskiy zazhim v operatsionnoi) L. I. Omorokoff
78 Extension Treatment of War Fractures of Femur M P Lavrova
79 Acute Intestinal Diseases in Soldiers (K voprosu ob ostrikh zabolievaniakh kishechnago trakta u nizhnikh chinov) A V Lavrinovitch
80 Influence of Acceleration of Cardiac Contraction on Duration of Period of Impulse Conduction and Systole (O vliianii uskorenia serdechnikh sokrashtsheniy na prodolzhitelnost perioda provedenia razdrazhenia i perioda systoli) N I Leporsky
81 *Electrocardiographic Diagnosis of Nodal Rhythm N A Tardzhimaniants Commenced in No 17

No 20 pp 457-480

82 *Vagotony and Sympathotony in Scarlet Fever in Children N I Molchanoff and D D Lebedeff
83 *Poisoning with Asphyxiating Gases D L Vostroff (Id.) M D Toushinsky
84 Campaign Against Typhus and Recurrent Fever (O borbie s sipnim i vozvratnim typhami) V A Brink
85 *Treatment of War Wounds of Rectum (K lecheniu ognestrielnikh raneniy priamoi kishki) N N Prokhoroff
86 Intravenous Injections of Iodin Combinations D K Averbukh

81 Electrocardiographic Diagnosis of Nodal Rhythm.—Tardzhimaniants found in a case of myocarditis that digitalis produced nodal rhythm but atropin stopped it Adonis vernalis caused nodal rhythm but only transiently The action of adonis vernalis and digitalis in producing nodal rhythm is thus identical He declares that the electrocardiographic method of examination is the only one with which an exact diagnosis of this type of rhythm is possible

82 Vagotony and Sympathotony in Scarlet Fever in Children—Molchanoff and Lebedeff studied the condition of the so called vegetative nervous system in ten children with scarlet fever during the period of recovery the second and third week The children were from 6 to 12 years old. They injected in turn epinephrin pilocarpin and atropin with an interval of from one to three days between them Before each experiment the blood pressure and pulse were taken and after the injections both the blood pressure and pulse were determined every fifteen minutes for two or three hours Epinephrin caused in every patient a rise of blood pressure and acceleration of the pulse, but there was no glycosuria, except quite slight in one patient Pilocarpin produced a more pronounced reaction, with salivation and sweating, and in three out of ten patients the pulse became accelerated and the blood pressure rose The atropin effect was less marked, merely dryness of the mouth, dilatation of pupils, and erythema, one patient gave no reaction whatever The conclusion arrived at is that among the ten little patients eight must be classed as vagotonics, one showed a certain even balance between the vagus and sympathetic systems and in one case no conclusion could be drawn, as only pilocarpin was tested The majority of the scarlet fever patients showed in the period of recovery distinct vagotony They consider the cardiac changes during the period of recovery from scarlet fever (retardation of pulse arrhythmia dilatation of heart) and the blood changes (eosinophilia) as manifestations of vagotony, while the so-called white or negative dermographism which was found in all the ten patients they consider as a sign of increased tonus of the sympathetic nervous system

83 Poisoning with Asphyxiating Gases—Vostroff treated 100 soldiers poisoned with asphyxiating gases The lungs were usually found in a normal condition, emphysema was present in eighteen cases marked anemia in eight, icterus in one and dilatation of the heart to the left in two The blood pressure was usually below normal, with slight lymphocytosis In addition there was a depressed state of the nervous system, with hypochondria All recovered with rest and fresh air treatment

Toushinsky reports a case of gastric ulcer caused by asphyxiating gases three and a half months after the poisoning The patient had been repeatedly vomiting blood, had blood in the stools pain after meals etc Before the accident there had been no gastric trouble It is undoubtedly to be ascribed to the action of the poisonous gases.

85 Treatment of War Wounds of Rectum—Prokhoroff obtained excellent results in the treatment of gunshot wounds of the rectum by making an artificial anus An incision 2 or 3 inches long is made in the left iliac region parallel to Poupart's ligament between the umbilicus and the anterior superior iliac spine the peritoneum is opened the sigmoid flexure drawn out *ad maximum* and in its omentum an opening is made with a blunt instrument and a rubber drain tube is introduced A dressing is then applied without any preliminary sutures on the peritoneum or rectum The wounds are widely dissected and loosely tamponed Twenty-four hours later a longitudinal opening of the extracted gut is made for a distance of about 1½ inches Two days after the operation a large enema of normal salt solution is given through the peripheral end Two weeks after the operation the patients could be sent to the base hospitals in an excellent condition

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

June 24 1 No 26 pp 2329 2420

87 *Operative Treatment of Trigeminal Neuralgia (Trigeminus neuralgie en de behandeling der hardnekkige gevallen) L J J Muskens To be continued
88 *Heart Disturbances Following Physical Fatigue. (Optreden van hartstoornissen na lichamelijke vermoeienissen) P H Kramer
89 *School Myopia Its Origin Importance and Treatment (Over de schoolbijziendheid) W Koster
90 Gangrenous Frontal Sinusitis. (Een geval van gangraeneuse ontsteking van den voorhoofdsboezem en etterige ontsteking van de zeefbeencellen met doorbraak naar de oogkuil) I C Henkes

87 Operative Treatment of Trigeminal Neuralgia.—Muskens is privat-docent of neurology at Amsterdam and he here presents evidence in favor of a method of treating inveterate trigeminal neuralgia as he has accumulated experience with it in the last five years The first steps of the operation are the same as for gasserectomy but instead of resecting the gasserian ganglion he crushes with clamps the second and third branches as they leave the ganglion He says that this causes the cells in the ganglion to atrophy and wither beyond repair while the operation itself is comparatively harmless The conditions permit the clamp to be applied at two or three points on the second branch, but